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UNIVERSITY OF PENNSYLVANIA

SOCIAL ASPECTS OF THE FOOD SURPLUS IN THE UNITED STATES

BY
BERNHARD OSTROLENK
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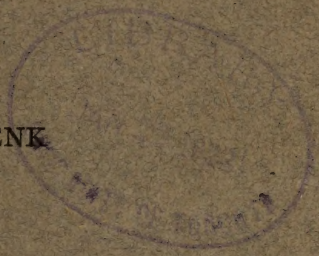

A THESIS

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
IN SOCIOLOGY

The Collegiate Press
GEORGE BANTA PUBLISHING COMPANY
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CHAPTER I

THE DECREASING FOOD SURPLUS

With few exceptions, such as sugar and coffee, the United States has been substantially self-sustaining in all important food stuffs. There has been a surplus for exportation. This became more apparent during the war when the country was asked not only to produce its maximum, but to conserve in the consumption of the more important food stuffs such as meat, wheat, sugar and fats to enable the surplus to be large enough to be a factor in feeding the American allies. The war, in a sense, proved a test of American production and consumption. If during a period of such stress, when all stimuli of patriotism and self interest demanded every effort for increased production and decreased consumption, both or either one of these objectives were reached, it would be safe to argue that production, or consumption of food stuffs or both are elastic. However, if under the stress of such direct stimuli as were applied during that period, production failed to increase materially and consumption failed to fall off; if under the prodding of an admittedly efficient department of agriculture to stimulate production, and a food administration backed by popular opinion in its meatless, wheatless and sugarless programs, neither production showed an appreciable gain nor consumption showed an appreciable falling off; the latter in fact, showing a steady gain, it would augur that neither production nor consumption are elastic, that neither one of them can be altered to any large extent except by a careful program extending over a period of several years.

It will be the object of the first chapter to examine agricultural production over a period of years and note its trend in general with a particular view of the reaction of production during the war period. We will first examine some of the primary foods, (e. g. foods that are grown for direct consumption such as wheat) and then the more important secondary foods, (e. g. foods that require primary foods for their production such as all meats, milk, etc.) after that a summary survey will be taken.

Primary Foods

WHEAT

The most important of the primary foods is wheat. It is recognized thru Europe and America at least, as the staple food product. It forms in a sense the barometer of food production in any country, and can be taken to a large extent as an indicator of the self sufficiency of the country in food. The exports in wheat may be regarded as the indications of the surplus, hence the tendencies of the export indicate the tendencies of the surplus. The exports of wheat in the United States since 1890 will be seen in the following table:

Table 1. Average Annual Exports of Wheat in Bushels

	Millions
1890–1899 ten year average	173,044
1900–1909 " " "	142,758
1910–1919 " " "	185,646
1910–1914 five " "	153,990
1915–1918 four " "	216,667

There was an average decline of thirty million bushels each year for the period from 1900–1909. After that a still further decline of thirty million bushels set in up to the outbreak of the war. The crop of the year 1914 was the largest in the history of the country up to that time. The average yield of 16.6 bushels per acre was unprecedented. The crop of 1915, in which both winter and spring wheat were seeded under the influences of the European war again gave the unprecedented yield of 17 bushels to the acre. Neither one of these yields per acre have been in any wise equalled in succeeding years as may be seen from the following table:

Table 2. Yield of Wheat per Acre in Bushels

Year	*Yield per acre*
1914	16.6
1915	17.0
1916	12.2
1917	14.1
1918	15.6

The surplus created by these extraordinary yields accompanied by enlarged acreage makes examination of the war period as a factor in production, misleading. Over 332 million bushels were exported in 1914, a figure not equalled by sixty million bushels in any succeeding year.

When exports of wheat are examined in proportion to the crop produced we get the following table.

TABLE 3. PER CENT OF WHEAT CROP EXPORTED

1890–1899	ten year average	34.23%
1900–1909	" " "	22.26%
1910–1919	" " "	23.09%
1910–1914	five " "	19.94%
1915–1918	four " "	29.42%

The average exports fell from 34.27% during the decade 1890 to 1899 to 22.26% the following period. Exports further declined up to and not including the year 1914 to 13.01% of the crop. The 1914 and 1915 crop again form misleading factors in subsequent calculation, yet exports in wheat during this period did rise to an average 25% of the crop grown making the total for the decade, slightly larger than for the preceding period.

Moreover, the increased exports during the war should be also examined in the light of the reserves of wheat maintained in this country. In table 4 are given the crop reserves of wheat and flour for a period of years before and during the war.

TABLE 4. CROP RESERVES OF WHEAT AND FLOUR

On July 1st, of year named	*Total reserves, bushels*
1910	79,814,000
1911	97,995,000
1912	84,189,000
1913	107,812,000
1914	81,006,000
1915	57,634,000
1916	179,174,000
1917	50,969,000
1918	17,504,000

By 1918 the crop reserves had fallen sixty million bushels below the lowest reserve before the war. The large exports of 1914 set a new low record for reserves the following July of 57,634,000 bushels. The unprecedented crop of that year, as shown before, going over a billion bushels coupled with a partial demoralization of shipping facilities gave a high record for reserves in 1916 which, however, were soon depleted to new low marks each successive year. Eliminating the disturbing factors, e. g., the two crops of 1914 and 1915 and

examining our exports solely during the time the United States entered the war we would get the following table:

TABLE 5. EXPORTS OF WHEAT AND WHEAT FLOUR IN BUSHELS

Period		*Exports*, 000 omitted
1909–1913	Five year average	100,310
1914–1915	Three " "	240,126
1917–1918	Two " "	188,860

The two good crops in succession coupled by depletion of reserves enabled the United States to export an average of 140 million bushels more than the preceding five years. This average was not maintained when America entered the war. Exports dropped back to an average of 188 million bushels. While this is still 88 million bushels more than the prewar average two factors mitigate against optimism of easy expansion of production. First imports of wheat and flour averaged twenty-five million bushels more than during the pre-war period and second, the depletion of reserves as pointed out before, amounting to almost 50 million bushels. Both of these factors to a very large degree wipe out any surplus over the pre-war period.

The area devoted to wheat increased steadily from 1880 to 1900 when, approximately 37,000,000 acres were devoted annually to the growing of wheat. From 1900–1910 the average acreage was 46,000,000 acres.

For the past ten years up to 1919 it averaged a little over 53,000,000 acres. The growth of population and increased consumption at home, however, readily absorbed the increased acreage, in fact rapidly out-distanced production, for as noted above, exports declined both relatively and absolutely. The relation of increased acreage of wheat and population is noted in the following table:

TABLE 6

Year	*Per cent increase in wheat acreage*	*Per cent increase in population*
1880–1900		45 %
1900–1910	12.4%	21 %
1910–1920	11 %	14.9%

The area devoted to wheat just before the war and during the war is shown in Table 7.

It is interesting to note that the annual average acreage in wheat from 1910–1914 was 52,452,000 acres and in 1920 it was fifty seven million acres. Between these periods it had fallen to forty-five million acres and risen to 72,308,000 acres in 1919. Whether this

TABLE 7

Year	*Wheat acreage* 000 omitted	
1910	45,681	
1911	49,543	
1912	45,814	Pre war wheat area average
1913	50,184	52,452,000 acres
1914	53,541	
1915	60,469	
1916	52,316	War area average 54,271,000
1917	45,089	acres
1918	59,181	
1919	72,708	Post war area average
1920	57,192	64,850 acres

latter area of over seventy two million acres was absolute increase in acreage or was land seeded to wheat at the expense of other crops may be seen from table 8.

TABLE 8

Wheat	increase	23,217,000 acres
Corn	decrease	4,395,000 "
Oats	"	2,514,000 "
Barley	"	1,193,000 "
Cotton	"	2,432,000 "

Total decrease in four principal crops 10,534,000 acres.

Almost half of the increased wheat acreage in 1919 can be accounted for by the decreased acreage in four of the important grain crops. It is probable that the abnormal increases in acreage in 1915 and 1918 can be accounted for in a similar way. On the whole, it must be pointed out, the wheat area was increased by almost two million acres for each of the four years during the war or a little over three percent.

It is fair to conclude from the foregoing discussion that there has been a tendency towards a decreasing surplus, that in spite of the propaganda of the war, the surplus was not appreciably augmented and that the acreage in wheat is not increasing as rapidly as the population and during the war the average annual increase only exceeded three percent by a fraction.

OTHER GRAINS

The United States has never been a heavy exporter of any of the other grains. Exports in corn show a decreasing tendency very much similar to wheat, as is shown in the following table:

Table 9. Exports in Corn

Year		*Per cent of crop exported*
1890–1900	Ten year average	5.95%
1900–1910	" " "	3.15%
1910–1919	Nine " "	1.7 %

Exports in corn fell off not only relatively but actually and at no time exceeded six per cent of the crop grown. Our largest exports were reached in 1898 when we exported 212,000,000 bushels. Exports then took a definite downward sweep until in 1913, just before the war, only 10,000,000 bushels were exported. The war somewhat stimulated our exports but the highest mark reached during that period was only 66,000,000 in 1916.

Exports in oats similarly fell from four percent of the crop to one percent before the war, but were considerably stimulated during the war. Table 10 is an indicator of the tendency of our decreasing exports of oats during the past eight years, and also shows that the country was commencing to import oats in some years to the same amount as its exports.

Table 10. Imports and Exports of Oats

Year	*Exports*	*Imports*	
1910	3,800,000	100,000	
1911	2,600,000	2,600,000	Pre War
1912	36,400,000	700,000	
1913	2,700,000	22,200,000	
1914	100,600,000	630,000	
1915	98,900,000	665,000	
1916	95,100,000	700,000	War and Post War
1917	125,100,000	2,600,000	
1918	109,000,000	551,000	

Other grains have been negligible factors in the food exports, in no case being more than 5% of the crop grown. All, however, show a tendency to decline relatively and in some instances actually. The average export of 27,000,000 bushels of oats, during the period of 1890–1900, declined to 11,000,000 bushels during the four year period just preceding the war, and only went back to 83,000,000 bushels during the period of the war when exceptional efforts were being made to grow oats for export.

Barley held its own in export to about 9,000,000 bushels during the twenty-four years before the war and jumped to 19,000,000 bushels during the war. Rye declined from an average annual export

of 5,500,000 bushels to 1,000,000 bushels but went up to 19,000,000 bushels for the five year period during the war. In none of these has the country held its own in percentage of export or has it been able to gain in one grain where it lost in others. Even the war was unable to sufficiently stimulate the surplus to the high mark previously held by some of the more important grains. Potatoes are one of the few crops that show a steady surplus. The stimulation given the crop through extraordinary high prices at home had much to do with the increase of the area planted to potatoes. It was estimated in 1918 however, that the undisposed surplus at that time was over 40,000,000 bushels even after the export trade had been taken care of. The high prices for potatoes that prevailed throughout the country despite the surplus was no doubt due to the lack of proper transportation facilities. The following table gives a more comprehensive view of the exports of our leading grains:

TABLE 11. EXPORTS OF GRAINS

Crop	*Averages* 1890–1900	*Averages* 1900–1910	*Averages* 1910–1914	*Averages* 1916–1919
Wheat (bu.)	194,600,000	142,900,000	109,300,000	239,900,000
Corn "	131,400,000	83,700,000	42,200,000	41,200,000
Barley "	8,400,000	9,500,000	8,800,000	19,400,000
Oats "	27,000,000	14,000,000	11,400,000	83,900,000
Potatoes "	700,000	1,100,000	1,800,000	2,600,000
Rye "	5,400,000	1,700,000	1,100,000	19,800,000
Cotton Bales	6,700,000	4,300,000	9,400,000	5,000,000

How far we have become dependent on imports becomes apparent from table 12 in which the primary human foods such as can be

TABLE 12. SUMMARY OF GROSS IMPORTS OF PRIMARY FOODS

Metric Tons

Year	*Total Gross Imports Primary Foods*	*Per cent of Domestic production*
1911–12	4,831,174	15.0
1912–13	4,635,987	12.2
1913–14	5,257,320	14.7
1914–15	5,143,853	12.1
1915–16	5,440,870	12.2
1916–17	6,192,173	18.7
1917–18	6,267,835	17.0
Total for seven years	37,769,212	14.4
Average per year, whole period	5,395,601	14.9
" " " prewar	4,908,160	13.9
" " " war period	5,761,183	14.9

directly used after harvest by cooking or some derivative form thru manufacture are reduced to metric tons.

It will be noticed that a normal average of 14.4% of the primary foods are imported to the United States and this gives a key to what extent we already have become dependent for imports of foods.

It is moreover, evident that our imports were steadily increasing. This is especially significant when the figures for the war period are scrutinized. In spite of attempts to curtail domestic consumption during that period, and attempts to divert imports to the western allies, the imports of primary human foods had become so important that the country was unable to check consumption. The fact that one-sixth of food had to be imported during such a crisis is important in showing to what extent we have become dependent on food produced on foreign soil. It may be of further interest to note here that roughly one-half of these imports of primary foods consisted of one class of foods, namely sugars.

Moreover, since it has been shown that exports decreased and imports have a definite upward tendency, it must also become clear that the country is increasingly losing its independence as being agriculturally self-sustaining. It is important to point out that during a war when every inducement of patriotism, economics and crowd psychology was for restriction of use of imported foods the importation continued to increase in the same ratio as in normal times.

Secondary Foods

CATTLE

In probably no other food commodity has the decreasing surplus become so evident as in the foreign trade in cattle. The number of cattle in the United States has been steadily decreasing until 1915 after which a slight change towards an increase occurred. This can be clearly noted from table 13.

It will be noticed that from a cattle exporting nation, the United States has changed in the last few years to a cattle importing nation, a change which the war only moderately halted. In 1914 the country reached the peak of importation when it imported 868,000 cattle against 18,000 exported that year. In 1918 it was still importing 300,000 cattle against an export of only 18,000 cattle.

TABLE 13. NUMBER OF CATTLE IN THE UNITED STATES

Year	*Number of Cattle*
1890	33,000,000
1900	50,000,000
1910	41,000,000
1914	35,000,000
1915	37,000,000
1916	40,000,000
1917	41,000,000
1918	44,000,000
1919	45,000,000
1920	44,000,000

Exports reflected the general domestic condition.

TABLE 14. EXPORTS AND IMPORTS OF CATTLE

Year		*Number of Cattle*	
		Exports	*Imports*
1892–1899	Eight year average	370,762	155,622
1900–1909	Ten " "	437,662	82,610
1910–1913	Four " "	104,802	279,720
1914–1919	Five " "	15,425	502,853

The packing house exports increased up to the year 1900 after which it took a sharp drop much along the line of the cattle exports.

TABLE 15. EXPORTS OF BEEF AND ITS PRODUCTS

(*as far as ascertainable*)

Year	*Exports-lbs.*
1900–1910 average	579,900,000
1910–1913 "	205,000,000
1914–1919 "	470,000,000

The change from an exporter of cattle to an importer cannot, therefore, be accounted for by the change in method of exporting beef; nor by a change in the weight of cattle. The total exports of packing house products fell off coincidentally with the decrease in export in cattle. In 1906 700,000,000 pounds of beef was exported. In 1914, just before the war, it had fallen to 151,000,000 pounds. The best figure it has reached by the favorable conditions surrounding exports during and since the war is 600,000,000 pounds in 1918. In the matter of beef, the country has already ceased to be self-sustaining and a most precarious balance in its favor could only be secured by including the diminishing exports of packing house products.

Exports in pork and products had similarly begun to decline when the war stimulated exports somewhat.

TABLE 16. EXPORTS OF PORK AND ITS PRODUCTS

(as far as ascertainable)

Year	*Exports-pounds*
1900–1910 Average Prewar	1,193,800,000
1910–1913 " "	978,701,146
1914–1919 " "	1,565,300,000

The number of swine in the United States had fallen from 62,000,000 in 1900 to 58,000,000 in 1910. The rising price per head coupled with the intensive campaign for pork production of the United States Department of Agriculture during the war, caused a rapid increase in the number. The estimated number of hogs in the United States in 1920 is close to 73,000,000.

Reviewing the exports in food in terms of money value, the Department of Commerce reports during the fiscal year, ending August 1st, 1920, imports of foodstuffs increased $680,000,000 over that of 1919 while exports of foodstuffs decreased more than $363,000,000. The following table makes this condition clearer:

TABLE 17

	1920	*1919*
Foodstuffs exported	$2,141,193,130	$2,502,852,400
Foodstuffs imported	1,513,776,309	832,422,991
Balance of trade	627,416,721	1,670,429,409

The trade balance fell in one year by $1,000,000,000 worth of foodstuffs.

The foregoing discussion tends to show that the complacency with which the average American regards the fact that the country is definitely self-sustaining, is not justified by a closer examination of the figures. The fact is, that the surplus has been decreasing markedly and that along some lines, notably meat, the country is on the verge of becoming an importing, rather than an exporting, nation. Moreover, the country is importing close to one-seventh of the nations primary human foods. The nation's independence as a food producer was declining rapidly and every indication is that the tendencies that operated before the war are in no wise altered and are likely to become operative again.

The United States is today consuming 95 to 99% of all it produces except wheat and even here the country consumes close to 85%

of the product grown. To offset this diminishing export the country is importing 15% of primary foods and in addition .19% of its secondary food consumed. This latter item, while seemingly negligible from the standpoint of relative amounts is an important indicator of the fact that the country is not self-sustaining in the production of secondary food. The fact that the period of the war merely saw a halting of the downward trend of exports and upward trend of imports should have an important bearing on the question of the elasticity of the surplus. This paper does not pretend that the surplus cannot be materially augmented. It probably can. It has merely attempted an inductive proof that such expansion of surplus can not come on short notice even when such notice is accompanied by most extraordinary stimuli. The conditions that probably hampered the creation of this surplus will be discussed later. It is important to point out that certain forces of production are apparently gaining momentum that can not be easily checked.

CHAPTER II

CONSUMPTION IS INELASTIC, STANDARD AND INCREASING

It has been shown in the previous chapter that production has not readily been materially augmented under the stress of great emergency and that the surplus was tending towards decreases even when conscious efforts of a war threatened nation, tended to halt them. It will now be interesting to note how consumption responded to a gigantic advertising campaign for reduction, a campaign that was organized thru committees, backed by rules, public opinion, administrators of various kinds and a host of appeals for substitution and restraint.

To the layman, the most obvious indicator of plenty of food would be its relatively low price. Food prices were low after the war and to some extent, during the war. The price of wheat, when corrected by the index was at no time very high and was one of the first commodities to presage the falling of all agricultural products. Table 18 shows this more clearly.

TABLE 18. FARM PRICE OF WHEAT

Year	*Wheat Price Dec. 1st.*	*Corrected Price according to index*	
		on other farm crops	*on articles farmers buy*
	Cents	*Cents*	*Cents*
1911	87.4	67	87
1912	76.0	59	74
1913	79.0	61	76
1914	98.6	74	95
1915	91.9	69	82
1916	160.3	98	128
1917	200.8	77	137
1918	204.2	73	108
1919	215.1	74	101
1920	144.3	53	65

If the surplus is decreasing, it may be asked why does the price tend to fall? In fact, wheat prices have fallen relatively faster than most any other commodities. More bushels of wheat are required to purchase a pair of shoes or build a house in 1920 than in 1910. The

falling price of a commodity is usually regarded as an indication of a surplus that can not be readily disposed.

As a matter of fact, the low price may have very little relation to surplus. A very large national surplus that can easily be disposed may tend to keep the price at a fair level while a small surplus that can not readily be disposed may utterly ruin the price. The farmer can not, from year to year, adjust himself to demand. Weather is a greater factor in crop production than any other single factor. In 1919, seventy-two million acres of wheat produced ninety million bushels less wheat than fifty-nine million acres in 1918. When wheat is seeded no one can foretell the quantity that will be produced. However, the entire crop must be sold. Since agricultural products are of such a nature that the point of first satisfaction is also the point of satiety, that with cheap bread very little more will be purchased than with dear bread, it can not be said that the gradual fall of prices indicates the surplus. After the point of satiety is reached agricultural products will fall sharply unless a ready market for the surplus is found. A small surplus, with a demoralized European market may utterly ruin or at least depress the price disproportionally. This would be especially true of agricultural products since they are highly competitive and are offered on the market freely. The mitigating factors would be the purchasing for future delivery and the withholding of stocks from a falling market. Neither factor, however, can be operative in the long run if a market for the surplus is not found. The low price of agricultural products then, must only cautiously be used as an argument of the abundance of agricultural food. Economists who, several years ago, predicted a world shortage of food may still be correct in spite of the low price of grain in the United States.

It may possibly be true that since production did not increase materially during the war, consumption may have fallen off under the social pressure of an efficient food administration. This point has to some extent already been answered by the examination of the surplus which must be an indicator of the joint effect of production and consumption. This chapter, however, is intended to take a closer view of the trend of food consumption with a special view of consumption during the war.

The most obvious fact of consumption must of course be the relative number of consumers to producers. A study of the distribution of urban and rural population would to some extent throw light on the subject.

In 1920, the preliminary report of the census showed the total population of the United States of 105,683,105 or an increase of 13,710,842 over the previous census in 1910. The strictly urban communities had gained during the period 12,192,826 the incorporated rural communities of less than 2500 population had an increase of 1,745,371 while the strictly rural communities showed an actual loss of 227,355. In other words the entire gain of population in the United States during the past ten years has been exclusively in the cities and incorporated rural communities and that the purely rural districts have been further depleted of their population. For the first time in the history of the country the census reports show that more than half the population are living in cities. One-tenth of the population of the United States are living in three cities, New York, Chicago and Philadelphia with a total population of 10,145,521. Whereas the country as a whole gained 14.9% in population, the three largest cities gained 199.5%, the urban population as a whole gained 28.6%, the population in incorporated rural communities gained 21.5% and the purely rural communities lost .6%. When Washington was inaugurated President of the United States less than 4% of the population dwelt in cities. When Harding became President 51.9% of the population lived in urban communities.

This in brief is a picture of the tendency of population in the United States. It would indicate that the country is turning with increased rapidity from a rural to an industrial development. Its people are migrating from the farms to cities. Losses in rural communities are not only relative but have begun to be actual. The largest cities are gaining even more rapidly than the country as a whole. Whereas it took nineteen men to produce food for themselves and one city dweller in 1876, making some exports possible, today, one man only remains in the country for each man in the city. The cityward movement of the rural population can be seen from table 19.

The figures given for 1920, as compared with corresponding figures for 1910, show that the trend of population from the country to the city has steadily increased during the decade and that, for the first time in the country's history, more than half the entire population is now living in urban territory as defined by the Census Bureau, that is, residing in cities and other incorporated places of 2,500 inhabitants or more. On this basis, therefore, it appears that of the

TABLE 19

Year	*Per cent Urban*	*Urban Population*	*Rural Population*	*Total Population*	*Per cent increase of Total Population*
1790	3.4				
1800	4.0				35.1
1810	4.9				36.4
1820	4.9				33.1
1830	6.7				33.5
1840	8.5				32.7
1850	12.5				35.9
1860	16.0				36.6
1870	21.0				22.6
1880	29.0	14,772,000	35,383,000	50,155,000	30.1
1890	36.0	22,720,000	40,227,000	62,942,000	25.0
1900	41.5	30,797,000	45,197,000	75,994,000	20.7
1910	45.3	42,623,000	49,448,000	91,272,000	21.0
1920	51.4	54,204,603	51,406,017	115,710,620	14.9

105,710,620 persons shown by the recent announcement of the official population of the United States for 1920. There are 54,304,603 or 51.4% living in urban territory and 51,406,017 or 48.6%, living in rural territory. The corresponding percentages for 1910 were 45.8 and 54.2, respectively, showing a gain of 5.6 per cent in the proportion for the population living in urban territory. The proportion of the population living in urban territory is larger in 1920 than in 1910 for all but three states,—Colorado, Montana, and Wyoming—the largest changes in the proportion during the decade being for Michigan—an increase from 47.2 to 61.1 per cent—and for Maryland—an increase from 50.8 to 60 per cent. Texas, Indiana, Ohio, Florida and Oklahoma also show considerable gains in the proportion of the population now living in urban territory as compared with ten years ago. The loss since 1910 in the proportion of the population living in urban territory in Colorado, Montana, and Wyoming is due to the fact that in each state by far the larger part of the total increase in the population was in the population living in rural territory, namely 65.6 per cent for Colorado, 77.7 per cent for Montana and 70.8 per cent for Wyoming.

It is difficult to estimate the sources of growth of the city population. The entire population of the United States increased from 1910 to 1920 by 14,438,000. Of this the urban population increased 11,671,000 and the rural population 2,058,000. The total foreign born in 1910 was 13,345,000 and in 1920, 13,700,000. This would indicate that there was a total imigration during these ten years of

about 400,000. According to the census report 72 per cent of these immigrants live in urban communities and 28 per cent in rural communities. Assuming these figures to hold good also for the immigrants of the ten years from 1910 to 1920, this would give us 328,000 immigrants going to the cities and 72,000 going to the country. Since the total increase of the country was 14.9, of which the immigration was 1.9 per cent, the natural increase of births over deaths would therefore be 13 per cent. Assuming all these figures to hold true uniformly throughout the entire country, the following table would give some sort of idea of the sources of city growth:

TABLE 20

	Urban Population
Natural increase	6,046,000
Immigration	328,000
Theoretical increase	6,374,000
Actual "	11,671,000
Gain from rural population	4,297,000

For the period of 1910 to 1920 it would seem that over four and a quarter million people left the country to go to the cities.

The loss of over four million rural population every ten years comes from the most vigorous stock of the country. There is a decidedly larger percentage of children in the country than in the city, as may be seen from table 21, a total of 10 per cent in favor of the country. This advantage is lost as these children reach manhood and leave the country. The city now has the larger percentage of young men and decidedly larger percentage of middle aged men, the advantage for the city being now 10 per cent. The figures clearly show that the young people begin to leave the farm at the age of 14

TABLE 21

	Population 1920		*Per cent of Total*	
Age Period	*Urban*	*Rural*	*Urban*	*Rural*
All Ages	54,304,000	51,406,017	100	100
Under 5 years	5,276,000	6,297,000	9.7	12.2
5 to 9 "	5,050,000	6,348,000	9.3	12.3
10 to 14 "	4,664,000	5,977,000	8.6	11.6
15 to 19 "	4,446,000	4,984,000	8.2	9.7
20 to 44 "	23,203,000	117,353,000	42.7	33.8
45 years & over	11,566,000	10,397,000	21.3	20.2

and that it is during the ages of 14 and 45 that the cities draw men mostly.

By comparing the percentage of the population of the United States living in rural communities or engaged directly in agriculture with similar figures of other leading countries; somewhat of an idea may be secured to what extent the country may still call itself in agriculture.

TABLE 22

Country	*Year*	*Per cent of total population living in rural communities*	*Per cent of male population engaged in agriculture*
United States	1920	48.1	35.2
France	1906	57.9	41.9
Canada	1901		45.4
Denmark	1911	59.7	
Germany	1907	45.7	27.7
Russia	1897	73.9	60.7

The United States is less agricultural than France, Canada, Denmark and Russia but to a very slight degree surpasses the old German Empire in the relative number of people living in rural communities or engaged in agriculture. The figures raise an honest doubt if the United States can still be spoken of as a great agricultural nation, when only a third of its male employed population is so engaged while such countries as France has over two-fifths and Canada almost one-half of its employed male population employed in agriculture.

Summarizing the foregoing, it may safely be said that the urban population has been increasing at the rate of twelve to fourteen million people per decade, while the rural population has only increased at the rate of three to four million people. The strictly farming communities have even begun to stand still and to lose. The gain to urban population seems to be in part, the results of immigration and migration of young people to the cities.

Consumption of food, therefore must have made progress in direct proportion as consumers increased. Of course, people in the country may be estimated to be consumers to the same extent as those in the city. Yet urban growth probably is related to increased consumption because a certain internal balance is struck even on the modern farm where much of the producers food is grown right at the farm. The growth of urban population definitely increases the number of mouths to feed.

TABLE 23. SUMMARY OF CONSUMPTION OF HUMAN FOODS, PRIMARY AND SECONDARY
(METRIC TONS)

Years	*Protein*	*Percent from*		*Fat*	*Percent from*		*Carbo-hydrates*	*Percent from*		*Calories (Millions)*	*Percent from*	
		Primary	*Secondary*		*Primary*	*Secondary*		*Primary*	*Secondary*		*Primary*	*Secondary*
1911–12	3,656,616	45	45	4,942,732	17	83	15,554,552	94	6	124,405,258	60	40
1912–13	3,563,756	46	54	4,891,478	17	83	16,079,158	95	5	126,107,751	61	39
1913–14	3,709,543	49	51	4,955,501	19	81	17,218,919	95	5	131,972,880	63	37
1914–15	3,601,137	46	54	5,304,837	18	82	16,179,529	94	6	130,518,116	60	40
1915–16	3,781,483	47	53	5,203,757	16	84	17,042,053	95	5	133,853,790	61	39
1916–17	3,714,983	45	55	5,393,366	18	82	16,404,318	94	6	132,730,094	60	40
1917–18	3,784,690	48	52	5,479,939	20	80	17,135,813	95	5	136,819,738	61	39
Total for seven years.....	25,712,118	47	53	36,171,610	18	82	15,614,342	95	5	916,407,627	61	39
Average, whole period.....	3,673,160	47	53	5,167,373	18	82	16,516,335	95	5	130,915,375	61	39
Average. 1911-12 to 1916–17.....	3,654,571	46	54	5,115,279	17	83	16,413,088	95	5	129,931,315	61	39

In table 23 is given the consumption of food nutrients by years from 1911 to 1917 in terms of metric tons of protein carbohydrates, fats and millions of callories. The table is obtained by using the production figures of the Year Books of the United States Department of Agriculture and the Crop Reporter and conversion figures from Atwater, Leach and Henry and Morrison.

From the table it becomes apparent that the amount consumed is fairly uniform irrespective of production or exports. This is in a large measure to be expected. The steady small increase in consumption can be accounted for by the increases in population. The consumption of protein, fats and calories increased moderately each year, the carbohydrates show the greatest fluctuation. In no way, however, can any relation between consumption and exports, imports or production be shown. This is indeed significant as tending to show that we are consuming a minimum requirement which is mounting and cannot be greatly interfered with by wars or crop conditions.

A second item of interest is the fact that fifty-three per cent of our protein and eighty-two per cent of our fats are consumed in secondary foods, e. g. meats, dairy products, poultry and eggs. This is significant as tending to show that in spite of vegetarian propaganda the nation to an overwhelming degree is using animal foods and their products. It also is a significant lesson as to the advisability of maintaining the animal stocks of the country. Hogs as was shown before had declined before the war, the number of cattle were decreasing and the tendency of milk cows before the war can be seen from table 24:

TABLE 24

Year	*Number of milk cows*	
1910	21,801,000	
1911	20,823,000	Pre War
1912	20,699,000	Period
1913	20,497,000	
1914	20,737,000	
1915	21,262,000	
1916	22,108,000	
1917	22,894,000	War and Post War
1918	23,310,000	Period
1919	23,475,000	
1920	23,747,000	

The number of milch cows were declining before the war. No records of a sufficiently comprehensive nature are available to show to what extent the increased production per cow makes up for the decrease in numbers. The number of pure bred Holstein cows increase from 33,000 in 1910 to 127,850 in 1920. The number of Jersey cows registered increased from 7,272 to 19,535 in the same period. The total Holstein and Guernsey would be less than .6 per cent of all cattle and hence not a safe indicator of the general condition of the industry. The consumption table would indicate the importance of maintaining the stock from which more than half of the food nutrients are drawn. As a matter of fact the dietary habits of the people have not changed and hence are not likely to change much. The importance of a cheap and plenteous supply of secondary food becomes equally important to that of cheap bread.

TABLE 25. HUMAN PRIMARY AND SECONDARY FOODS. CONSUMPTION

Average for 1911–1917 in terms of percentage of nutrients from absolute Foods

Commodity	*Per cent of protein supplied*	*Per cent of fat supplied*	*Per cent of Carbohydrate supplied*	*Per cent Calories supplied*
Grains	36.01	3.98	56.10	34.68
Meats	26.38	50.66	.03	21.63
Dairy Products	20.38	27.49	5.48	15.26
Poultry & Eggs	6.74	3.39	0	2.02
Vegetables	5.87	.41	8.66	5.32
Fish	2.32	.35	0	.41
Oils & Nuts	1.58	12.19	.34	4.82
Fruits	.6	.40	3.82	2.20
Oleomargarine	.02	1.13	0	.42
Sugars	.01	0	25.54	13.24

It is interesting to note from what sources the nutrients are drawn. Table 25 is prepared to show the percentage of nutrients supplied by each of the important foods. The preeminence of the grains, meats, dairy products and poultry and eggs becomes apparent as a source for protein nutrients. Together they supply almost 90 per cent of the protein. The meats, the dairy products, and oils and nuts supply 90.34 per cent of the fats. The grains, and sugars supply 82 per cent of the carbohydrates while the grains, meats, dairy products and sugars supply 83 per cent of the calories. Stating the case in another way, it may be said that the grains, meats, dairy products, oils and nuts, poultry and eggs and sugars supply from 82 to 90 per cent of the nutrients of the diet of the nation. The rôle

played by the vegetables as a nutrient is disappointing and fully justifies the concentration of the United States Department of Agriculture on grains, cattle and hogs as the major sources for food during the war. It is important to notice that a relatively few commodities are the sources of all of our food. Sugar which by many, before the war was regarded as mere sweetener of food, a substance to make food more palatable is shown to a major commodity for supplying carbohydrates.

The foregoing discussion would indicate that consumption would tend to increase since the urban population is growing faster than the rural population; in fact, is growing at the expense of the latter. Again, the study of the war period with the preceding period shows that consumption is largely fixed and the war had no appreciable effect in diminishing it. This was to be expected. The only commodity in which a fluctuation took place was carbohydrates. When it is remembered that sugar rose in price from five cents per pound to twenty-eight cents per pound and on many occasions could not be obtained at any price, one is surprised to find how really small the effect on consumption was when so extraordinary stimuli to save is considered. The study of this one item alone would justify the assertion that food is an inelastic commodity. A study of the commodities consumed shows how surprisingly few commodities form the largest share of food consumption. Food, in spite of the variety presented by the A la Carte dining place is surprisingly standard. The importance of the secondary foods in the nation's diet while expected, is significant in focusing attention on the economic and social problems that are a part of such production.

CHAPTER III

PRODUCTION HAS SEVERAL ASPECTS OF BEING STATIC

A. Total Production is Relatively Fixed

The total production of primary foods in the United States as is seen from table 26 increased from 1912, to 1913, when there was a slight decline which was made up the next year by an increase of seven million metric ton. In 1916 production had reached the peak for the period of 44,718,207 metric ton. The next two years saw only normal prewar production of food.

In sharp contrast to the fluctuation of primary foods is the steady increased production of secondary human foods. As may be expected once a nation embarks upon production of secondary foods it is difficult to turn away easily. It may, however, also be concluded from the same table that once secondary food production has turned downward it is with the utmost difficulty turned towards higher production again. Secondary human food production was on the downward grade in 1911–12. It remained virtually stationary during the next two years and then in 1914–15 increased to 52,000 metric ton. From that point increases were steady though with lessened velocity in 1917–18 when it reached 56,000,000 metric ton. There seems to be no relation between productivity of primary and secondary foods. The peak of production is reached in different years for the two classes of human foods.

When the two classes of food are combined they reach a peak of maximum in 1915–16 after which there is a sharp drop from 96 to eighty-eight million metric ton and a rise again the last year of the period to 93,000,000 metric ton. It is to be noted, however, the impressive per centage of secondary food produced. Four-sevenths of our production is of secondary human food. When it is recalled that it takes about ten pounds of primary animal food to produce one pound of animal flesh or animal product, it becomes apparent that for every metric ton of secondary human food produced, there must be grown on the land ten metric ton of feed. Roughly, the amount of feed necessary to feed the animals can then be estimated as 526,000,000 metric ton a year. When this is again compared with the average annual primary human food production of 37,000,000

TABLE 26. TOTAL HUMAN FOOD PRODUCTION IN THE UNITED STATES

Year	*Total Primary foods as commodity*	*Relative changes 7 yr. average = 100*	*Total Secondary foods as commodity*	*Relative changes 7 yr. average = 100*	*Total of foods as commodities*	*Per cent from*	
						Primary	*Secondary*
1911–12	32,284,633	86	50,644,020	96	82,928,653	39	61
1912–13	37,974,989	101	50,009,300	95	87,984,289	43	57
1913–14	35,831,949	95	50,135,187	95	85,967,136	42	58
1914–15	42,354,173	113	51,945,085	99	94,299,258	45	55
1915–16	44,718,207	119	53,894,653	102	96,612,860	45	55
1916–17	33,059,677	88	55,647,201	106	88,706,878	37	63
1917–18	36,913,722	98	56,266,336	107	93,180,058	40	60
Total for seven years....	263,137,350		368,541,782		631,679,132	42	58
Average per year whole period.....	37,591,050		52,648,782		90,239,876	42	58
Average per year, three prewar years.....	35,363,857		50,262,836		85,626,693	41	59
Average, war years.....	39,261,445		———		93,699,763	42	58
Per cent nutrients to total (whole period) and calories per pound	49.1		14.7		29		

metric ton it becomes clear that fully ten times as much land is devoted to secondary food production as to primary human food. In other words of the 480,000,000 million acres under cultivation in the United States 430,000,000 acres are devoted to secondary food production while 50,000,000 are devoted to the growing of primary human foods.

The vast cost and expense of production of secondary foods becomes apparent when considered from the standpoint of land used only. Speaking broadly it may be assumed that all factors thus far discussed favor soil development in the United States. The amount of land withdrawn for primary food production would well fit into a rotation in which stock farming is the dominent factor. The amount of secondary food produced is indicative of a reasonable supply of stock. From these figures it is difficult to estimate the general efficiency with which stock excrements are handled. Other conditions necessary for soil building would be a stable farm population to continue crop rotations, add the essential fertilizers and make the necessary annual repairs and improvement.

Reverting to table 26 it is worth while noting that the total of nutrients contained in the primary and secondary foods is 29 per cent. In other words, 71 per cent of the foods produced for human consumption is waste as far as body building or supplying nutrients is concerned.

Two other factors of a social nature are worth while noting from this discussion. First a study of the relation of land to production to note of the law of diminishing return has set in and second the relation of production to population to note if the Malthusian theory is operative.

Assuming that the land with acreage reports as given in the 1910 census increased at the rate of 5 per cent during the next seven years we would have the following acreage under cultivation:

TABLE 27. ACRES UNDER CULTIVATION AND YIELD OF PRIMARY AND SECONDARY HUMAN FOODS

	All Crops with Acreage Report	
Year	*Acres*	*Human Foods*
		Metric Tons per Acre
1911	312,000,000	.102
1912	314,000,000	.120
1913	315,000,000	.113
1914	316,000,000	.134
1915	318,000,000	.138
1916	319,000,000	.106
1917	321,000,000	.114

It would be difficult to say whether the law of diminishing return, e. g., diminished increases on equal areas of land but additional units of capital and labor, has become operative when there is a variation of 36 per cent in production within two years. No well defined tendency is distinctly observable except possibly the fact that production is static. The variation may be due to other factors than increased application of capital and labor per acre. The weather conditions favoring or retarding crops may be much more responsible for the variation. In attempting to get a relation between population and production the following of population is used and the amount of foods produced per man is obtained:

TABLE 28. RELATION OF FOOD TO POPULATION

Year	*Population*	*Production per capita, Kg.*
1912	94,736,339	875.4
1913	96,354,333	913.1
1914	97,972,327	877.5
1915	99,590,321	946.9
1916	101,208,315	974.4
1917	102,826,309	862.77
1918	104,444,303	892.2
	Annual average, whole period.....	906.1
	Annual average, 3 pre-war years.....	888.7
	Annual average war period.....	918.5

Again there is no evidence as yet that population is outrunning subsistence.

It is important to point out that production of primary food in 1911 was thirty-two million ton and during the stress of the war in 1917–18 it was only four and a half million ton more, an increase of ten per cent, secondary foods increased seven per cent over the same periods. It must be remembered that a share of this increased production was absorbed by increased population. In 1912 the production per capita was 875.4 kg. In 1918 it was only 892.2 kg., an increase of .1 per cent. The figures would tend to confirm the statement that production is relatively fixed.

B. CROP YIELDS ARE INCREASING WITH NO RELATION TO PRICE

Yields per acre in the United States have been steadily increasing in the past forty years. These increases become more apparent when ten year averages are discussed rather than when any set of

years are compared. The average rate of increase has been about one per cent per year as will be seen in the following table:

TABLE 29

Crop	*10 yr. average 1880–1890*	*10 yr. average 1908–1918*	*per cent increase*
Wheat	11.84 bu.	14.87 bu.	25 %
Corn	23.43 "	25.41 "	10 %
Oats	25.92 "	32.17 "	24 %
Potatoes	72.97 "	96.84 "	33 %
Hay	1.19 ton	1.43 ton	20 %
Cotton	169.7 lbs.	175.73 lbs.	3.5%

If the census years are taken the increases are not so apparent due to conditions that may hamper a crop during some one year. In the following table the census years averages for the leading crops are shown:

TABLE 30

Crop	*1879*	*1889*	*1899*	*1909*	*1919*
Corn-bu.	28.1	29.4	28.1	25.9	23.6
Wheat-bu.	13.0	13.9	12.5	15.4	12.8
Oats "	25.3	28.6	31.9	28.6	29.4
Potatoes-bu.	98.9	83.6	93.0	106.1	89.2
Hay-tons	1.15	1.26	1.28	1.35	1.62
Cotton-lbs.	181.0	159.7	183.8	154.3	158.2

The fluctuations in yields indicated in the census years, it will be seen, are no criterion of the general upward trend of yields per acre indicated in table 29. Wheat increased 25 per cent in twenty-eight years, corn increased 10 per cent during the same period, oats increased 24 per cent, potatoes 31 per cent and hay 20 per cent. Similar increases have also been observed in the minor crops. The average increases per acre of all crops in the 10 years ending 1918 compared with the 10 years ending 1890 was about 16 per cent. The following table shows that the increases were not confined to any one section.

It will be noted that the eastern section of the United States, whose fertility it had been alleged had been exhausted, had even better records for increases in per acre yield than the west with its fertile and virgin soil. Comparing six of the New England states only, the same general tendency is observable.

TABLE 31

	10 year average 1866–1875	*10 year average 1876–1895*	*10 year average 1886–1895*	*10 year average 1896–1905*	*10 year average 1910–1919*
Corn—					
East of Miss.	27.25	25.11	24.46	26.89	30.84
West of Miss.	28.83	25.81	22.84	23.76	25.87
New York	31.6	30.4	31.1	30.3	36.5
Minnesota	32.2	30.9	27.6	29.1	34.2
Wheat					
East of Miss.	11.33	11.61	12.42	13.66	13.07
West of Miss.	14.78	13.86	14.62	17.5	18.02
New York	14.1	15.5	15.4	17.5	20.8
Minnesota	13.5	12.8	13.7	15.3	14.1

Corn has increased in these New England states 36 per cent over the ten year average ending 1875 and 38 per cent over the ten year average ending 1890. Wheat increased 63 and 60 per cent respectively over the same period. Similar increases can be observed in virtually all major and minor crops.

TABLE 32

Per cent of increase in average yield per acre during 10 yrs. 1909–1918, over

Crops	*10 yr. average 1866–1876*	*10 yr. average 1881–1890*
Corn	33	38
Wheat	63	60
Oats	25	24
Potatoes	27	69
Hay	24	23
All field crops (weighted)	25	26

It is therefore obvious that the country has been increasing in its per acre yield in all crops. This is true if the country is taken as a whole or if any of the sections of the country are examined singly. In other words, the increase is general and cannot be ascribed to any one section. Moreover, the older section, such as the New England states, New York or the states as a whole, east of the Mississippi, saw the same general tendency in an even more pronounced form.

If crop yields were the sole index of soil fertility it is obvious that there has been no loss of soil fertility in either the newer or older states. However, such an assumption would not be justified by

the facts. Much of the increased yields may be traced to better cultural methods, the development of seeds better adapted to soil and climate, development of disease resisting varieties, fuller knowledge of insect and disease control methods, the increased use of crop rotation and the introduction of machinery. Draining the land and the better understanding of the use of fertilizers have also had much to do with increased yields. All these may in some measure be credited for the increased yield, and it would be difficult to separate any one of these factors from the result. The charge of inefficiency so frequently directed against the farmer is obviously not justified. Methods of farming have generally improved. The view so often expressed that American agriculture is deteriorating is disproved by the figures.

On the other hand, optimism in this direction is not wholly justified. It must be recalled that the yields in the United States are exceptionally low in virtually all crops when compared to yields in Europe. From 1910 to 1914 the average yield of wheat in the United States was 14.8 bushels. During the same period the yield in Germany was 31.7 bushels; in Austria, 20.8 bushels; in France 19 bushels and in the United Kingdom, 32.4 bushels. Moreover while our crop increased from 11.8 to 14.87 bushels, or 25 per cent, such undeveloped countries as New Zealand increased 28 per cent from 24.6 to 31.5; Ontario, 12 per cent or from 19.4 to 21.8; Manitoba 7 per cent from 17 to 18.2 bushels. In the light of these yields and the increases made during a ten year period, the increased yields in the United States ceases to give room for optimism. The argument often raised that the yield in the United States is not comparable with that of the more densely settled countries is well taken. The American farmer no doubt, produces more per man than any other farmer in the world and to get the increased yield per acre of the older countries would require more labor than the American farmer can afford to utilize or to get. Nevertheless, it is also true that in spite of increased stimulus the American farmer has been unable to make his soil yield sufficiently more per acre to justify the assertion that whenever the price is high the increased yield will be forthcoming. This becomes clearer when we re-examine the yield in the light of prices of products.

An increase of almost 50 per cent in price of wheat brought an increase of 7 per cent in yield per acre. An increase of 130 per cent in the farm price of corn yielded an increase of a little over 3 per

TABLE 33

Year	Corn		Wheat	
	10 yr. average yield per acre	*Farm price per bu.-cents*	*10 yr. average yield per acre*	*Farm price per bu.-cents*
1866–1875	26.1	47.8	11.9	108.6
1876–1885	25.5	40.1	12.3	92.6
1886–1895	23.4	38.2	12.7	68.3
1896–1905	25.2	37.1	13.5	69.0
1910–1919	26.1	83.8	14.6	130.2

cent per acre yield. The assumption made that when the price becomes right farmers will spend more time for tillage, will pay more attention to seed and will buy more fertilizers, is not born out by these figures. While this comparison is not wholly correct, as no doubt the increased cost of many of the farmers needs during the rising price of corn and wheat made these farm price increases relatively less large as would at first glance appear and thus equalize the price with yield somewhat, it must also be remembered that during several of the years of this period the additional stimulus of a foreign war caused the farmers to exert their utmost to obtain maximum yield. No doubt, yields can be considerably augmented in present cultivated area in the United States. It may also be true that considerable larger yields will be secured if the stimulus in the way of prices is provided. None of these assertions, however, can withhold the further fact that such increases will be very slow and will require a considerable increase in the price of food. Moreover, it has not been demonstrated that these increases can be made with any degree of elasticity even if the price is made sufficiently attractive. The history of the crop of the past ten years shows the contrary to be the case. Yields per acre have not followed the upward curve of prices.

It must, moreover, be borne in mind that the increased yield per acre in the United States shows no relation to loss or maintenance of fertility. The yields were originally so small as to be no criterion of the capacity of the soil. The increases have also been relatively small. Moreover, so many factors have entered into the development of agriculture that it is hard to assign to soil fertility its rightful place. The general impression that conditions in the country are such as to make soil depletion probably should be given some weight. Moreover, all observation tends to show that the use of fertilizer, crop rotation and the conservation of humus are by no means, general; especially in the newer sections of the country. The further fact

that the older sections have made the increased yield per acre by abandoning many of the farms that, for one reason or another ceased to be profitable, is also noteworthy. It is the concensus of opinion that these farms lost fertility. The exhaustion of the humus of the soil is given as the chief reason for the lack of fertility.

The increases in yield per acre, while a matter of congratulation, are not final tests of the fertility of the soil. Soil depletion is probable in spite of the increasing yield and should be a matter of concern to those who are viewing the agriculture of the country from the standpoint of permanent fertility. The increases in yields moreover, are not as satisfactory as would at first glance, appear and do not appear to have a close relation to price.

C. The Unimproved Land Will Probably not be Greatly Developed

The total area of the United States is 1,903,289,000 acres. A little less than half of this area, 878,793,325 is now in farms. Only a little more than half of this are in farms, 478,451,750 acres is cultivated. In other words, only a fourth of the area of the United States is under cultivation. The 800,000,000 acres now in farms are divided up into approximately 600,000,000 farms of 138 acres each of which 75 acres is improved. The unimproved land now in farms and presumably potentially capable of improvement is divided up into 200,000,000 acres of forest and cut over land, 60,000,000 acres of swamp, 30,000,000 acres of irrigable land and 80,000,000 acres of unimproved land other than woodland. Of the 1,000,000,000 acres not in farms 360,000,000 acres is in forest land; 615,000,000 acres is in grazing land, 40,000,000 acres is an absolute desert and 40,000,000 acres are in cities, rural highways and railroad rights of way.

Assuming that much of the unimproved land in farms is capable of cultivation by the expense of labor and capital, we could reclaim much of the cut over land, drain the swamp land and irrigate the dry section. The ground so improved would be equivalent to 3,000,000 farms or an increase of 50 per cent of the farms in the United States. No governmental or state policy could be of practical aid in the development of this land. The land is already included in farms and annually each farmer drains or clears such additional land as his capital permits provided the returns from the land justify the expenditure. The improved land in farms increased 15 per cent during the ten years from 1900 to 1910. This increase has not

been uniform. In fact, New England abandoned almost a million acres of its land during that period, being 10.8 per cent of it arable land. New York, New Jersey and Pennsylvania abandoned from five to nine per cent of its improved land. Some of the southern states, such as Delaware, Maryland and Virginia, abandoned from 2 to 7 per cent of their farm land, and even California gave up 5 per cent of its arable land. On the other hand, the greatest addition to the improved land came in Colorado, 34.8 per cent; Montana 10.9 per cent; Oklahoma 10.4 per cent and North Dakota with 11.2 per cent. The following table gives a more general view of the situation:

TABLE 34. INCREASE IN IMPROVED LAND IN FARMS 1900–1910

	Amount (Acres)	*Per cent*
United States	63,953,263	15.4
The North	28,575,175	10.9
The South	24,583,759	19.5
The West	10,797,966	39.8
East of Mississippi	6,021,157	2.8
West of Mississippi	57,932,106	28.6

It would seem that the increase of 15 per cent for the United States does not justify the hope for large similar increases in the future. Most of the increases were made on virgin soil in the west, where large tracts of grazing land were converted into farms. In the east, the amount of improvement on farms was insignificant, being less than three per cent. The increase of improved land for the ten year period ending 1920 is 6 per cent. This in spite of the special stimulus given this work by the war.

The layman who sees idle land when prices of food are high and on snap judgment decides that this land should at once be placed under cultivation, fails to comprehend that the labor and expense incident to draining and clearing of land for agriculture are often not justified. The crop areas increased 10 per cent from 1914 to 1918 showing that under pressure some increases in this direction may be expected. The use of inferior land in normal times is unwise and financially usually reacts disastrously. Reactions of this type have set in, in eastern states as indicated above.

Moreover, there is a wide variation in the expense involved and the usefulness of the land cleared in the various parts of the United States. Allowing the usual economic tendencies to dictate the improvement of the soil would seem to be the only practicable policy.

The development of much greater areas within the farms for agricultural purposes may be checked by other factors. It may be found that it is economically desirable that each farm supplement a national supply of forest by a woodlot of its own. Much land is in permanent pasture in which form it yields the farmer the maximum return. The increased use of machinery, on the other hand, demanding larger farm units to work, may cause many a farmer to seed additional acres on his own land.

In discussing the probability of bringing the 1,000,000,000 acres of non-arable land under cultivation, it is well to consider certain factors essential for crop production.

First. The land must be of a nature to allow machinery to pass over it with ease. Land that is stony and hilly is not adapted for agricultural use irrespective of the fertility of the soil or the amount of rain-fall. Such land is of greatest use only for forests, and if depleted of its original growth, governmental policy should be directed towards reforestation rather than expensive experiment of reclamation of undesirable land for agriculture. One-fifth of the total area of the United States is unfit from this standpoint for farm land. 3,500,000 acres largely in the western states, with an additional small area along the Appalachian region, may be permanently regarded as non-agricultural land.

Second. There must be sufficient annual rainfall for crop production. The minimum required varies with the type of soil and the kind of crops grown. Crops have the best conditions for development at a minimum annual rainfall of twenty inches distributed evenly during the growing season. Much of the area of North Dakota, South Dakota, Nebraska and the land lying west of the 100th meridian has a rainfall of less than ten inches. Much of the soil in this region, though fertile and level, is unfit for agricultural use in its present state. It comprises a total of 600,000,000 acres or a third of the area of the United States. It is now largely used for grazing, portions of it having been placed under irrigation. Heavier crops are grown during the season of exceptional rainfall, in which case these crops are used to supplement the grazing land. Irrigation on this vast area has been confined to those regions that promise to give most satisfactory results. Over 13,700,000 acres, comprising 158,713 farms, have been irrigated at a cost of $307,866,369.00 or $15.92 per acre. The average cost of operation and maintenance is estimated $1.07 annually. One-fourth of these irrigated farms are in California. It would be

difficult to estimate what proportion of the arid regions could be further irrigated and to what extent we may depend upon irrigation for our increased agricultural area.

The total increase in area of the irrigated region was only 11 per cent from 1900 to 1910. Of the 600,000,000 acres of arid land the most optimistic estimate of the Department of the Interior allows only 20,000,000 acres as capable of agricultural development, if properly irrigated.

Third. The length of the growing season is a factor. Over a considerable portion of northern Maine, Minnesota, Dakota and other northern states and some of the mountainous western states, the season is less than ninety days. This does not prevent the growing of certain hardy crops such as oats, spring wheat, potatoes and hay. In fact, an inconsiderable portion of the United States is prevented from growing crops by lack of length of growing season.

Fourth. The last factor of some importance is the fertility of the soil. Much of the sandy land now in shrubs and trees would be unsuited for agriculture. Such land would require an expensive process of soil building after it has been cleared. Only unusual conditions in the way of market or specialized types of farming unusually profitable and adapted to the soil, would justify the development of such land.

Summarizing then, it would seem that the land now of a non-arable nature is not land sufficiently attractive in the chief factors that go for success to justify hopes of their speedy development. Of the 1,000,000,000 acres that is now virtualy waste, the best estimate is that 20,000,000 acres can be irrigated, that 200,000,000 acres can be reclaimed from cut over land and that 80,000,000 acres can be drained. The vast area in the United States is too stony, too dry, too wet, or too expensive to clear. Even the possibility of reclaiming these 300,000,000 acres of land by the processes outlined is not altogether within the economic possibilities.

It may seem that the probability of clearing 300,000,000 acres of land providing farms for more than 2,000,000 additional farmers, or an increase of one-third of the number in the country plus the possibility of developing the unimproved land now under cultivation, making an increase of 50 per cent in the agricultural land would augur a safe margin on which to depend for the future food supply of the nation. It must be reiterated, however, that the increase if so made, either in the arable or non-arable land, of the country will

demand the expenditure of vast sums of money and the great stimulus of a profitable farming. In the meantime, it is worthy to note that while the population during the period of 1900 to 1910 increased 21 per cent, the improved land increased only 15 per cent. During the past ten years the country increased in population 14.9 per cent and the improved land increased 6 per cent. Discounting the abnormal condition of the war, we have no reason to be sanguine over the fact that more land can be placed at the service of the nation when the need arises. Indications are that the best land is in use today and that inferior land will come into use relatively slowly.

D. Rural Cooperation is in Formative Stages

The past decade has seen the organization of industries in the cities unto units of unprecedented size. Capital was pooled into trusts that organized with efficiency for buying of raw material, production, manufacturing, transportation and selling. In its wake labor organized into powerful unions, dictating terms and conditions of employment.

Parallelling this urban organization a cooperative movement has been afoot in the country but without much influence in organizing farmers into effective bodies. A different condition confronted the rural population than the city had in its trusts and unions. There was not that cohesiveness of a union nor the common interest of a trust. More units had to be considered with a diversity of interests. The farmer in Iowa was not interested in a cotton growers combine, nor was the New Jersey fruit farmer interested in elevators. Trusts and unions of the types developed in the city were out of question in the country. The cooperative plan was developed which, in its highest form, is an organization of benefit to those who deal with it. Thus the aim of a cooperative grain elevator is to pay the highest price for grain to the farmer who has grain to sell and no profits as such were made by the elevator. The capital necessary for the organization of such an elevator is distributed among a large group of men with restrictions on the amount of stock one man can hold and the vote divided equally among all stockholders. In many cases cooperative organizations, so-called, were formed with stockholders of unrestricted amount of stock and unlimited profits. It is difficult to see wherein such an organization differed from private control of elevators and wherein the farmer who could not invest in this stock benefitted. The best that can be said for that kind of an

organization is that the stock was held by a few farmers rather than by a few city people.

In 1907 the Secretary of Agriculture reported 8,500 cooperative agricultural societies in the United States, having a membership of 3,000,000. This would include half of the farmers of the country. There can be no doubt that many of these cooperative societies were loose in their organizations and many of them failed. Moreover, many farmer's clubs may have been included, who occasionally cooperated in some buying or selling project. A more thorough investigation of the Office of Markets in 1917 brought to light only 5,424 cooperative organizations in the United States. Of these 2,416 were stock companies, while only 2,711 were truly cooperative. The volume of business amounted to $45,891,371.00 in 1915 and the number of members were 567,096.

The largest number of cooperative organizations were reported to exist in the form of grain elevators. Of the 1,578 cooperative elevators, however, only 496 were organized on a cooperative basis, the rest were cooperative stock companies. Most of them were in the middle west and have done an incalculable amount of good in raising prices of grain locally and protecting farmers from the "wheat thief." In organizing these elevators, farmers had to compete with an existing private organization which in many cases were under unified control along the length of an entire railroad line, and hence were termed line elevators. These line elevators were able often to underbid the farmers' elevators for business and make up their losses at other points of the railroad. To combat this unfair competition some of the legislators of the western states enacted laws making it mandatory for grain prices to be uniform with line elevators after differences in freight charges to terminal points were deducted. The most effective help of the farmers' elevator came, however, through the organization of state-farmers-elevators associations that effectively met the line of elevators on their own grounds. The alliance of the line elevators with terminal elevators caused the state associated farmers to erect their own terminals in some instances. However, it must not be overlooked that many of the farmers' elevators failed to live up to the cooperative principles and became stock companies in the full sense of the work. In many cases the stock is not even held by farmers. It has either been transferred or may even originally have been held to local business men who invested as an aid to farmers and then turned it to profit for themselves.

Of the 1,645 farmers creameries in the United States, 1,124 are cooperative, thus showing that creameries more generally tend to be on a more truly cooperative basis.

Most of the cooperative creameries are situated in the middle west. The organization of the creamery did not encounter the opposition that met the elevators, though the creameries also had to meet a species of line elevator in the form of centralized creameries with shipping stations. It was difficult to combat the shipping station and the centralized creamery because of the economy of operation. A better product of butter produced cooperatively by encouraging frequent delivery of cleaner cream, enabled the cooperative creamery to give a better price in the long run and had moreover the effect of raising the standard of the product. Much loss was encountered by farmers through the organization of creameries before a sufficient number of cows were in the community to justify such a venture; the creamery machine sales agent being too often the over-enthusiastic sponsor for the cooperative creamery. In many cases creameries conduct launderies along with the buying of butter fat.

The 811 fruit growers associations exist mostly in the western fruit growing region. These are complex large associations insuring grading of fruit and the prompt marketing of the produce. They conduct advertising campaign and in many cases insure prompt transportation of the perishable produce. Local organizations were merged into larger units enabling a most comprehensive selling campaign of a standard product. Considerable work is done in selling to members, supplies, such as boxes, paper, nails, spraying material, etc.

In addition to these cooperative organizations there are reported cotton, tobacco, livestock and miscellaneous organizations. The livestock associations are in a large measure cooperative shipping associations to protect the farmer who himself is unable to make up a carload of stock from the profiteering of the local buyer.

The 275 cooperative stores reported are well distributed among the states. There is no doubt but what cooperative selling through the farmers' grain elevator, creamery and exchange has received much applause. This cannot be said for cooperative buying. The large number of failures of cooperative stores impresses one with their dubitable economic value. The personal attention such an enterprise needs does not seem to lend itself to cooperation through an impersonal board and manager. Moreover, the store comes in hostile contact

with the entire town in which the farmer trades. This town forms a center of much of his social activities and depends on the farmers' trade for its life. With the special service the farmer usually demands in the way of credit, it is difficult to say whether these privately owned stores in the town have as a rule, made excessive profits or have placed unusually high prices on goods.

It has, however, seemed unwise to antagonize the good will of the town to the farm communities surrounding it through the organization of stores. Much cooperative buying in the way of carloads of feed, fertilizer, fencing material and other products exist and are frequently undertaken to chastise a local "get-rich quick" dealer. The ordinary competition in the town, however, is sufficient to assure the farmer a fair price on many of the ordinary articles that he purchases. The cooperative store on a strictly cooperative basis has been a success in isolated instances only.

Although agricultural cooperation in the United States started in the latter part of the 18th century, it is as yet undeveloped and scarcely worthy to be classed along such well organized movements as the trust and labor union. In 1920 less than 8 per cent of the farmers were associated with these movements, and then only if cooperative stock companies were included which are only remotely cooperative. Moreover, the $800,000,000 worth of business done represents a small volume of the business of the farmer in this country as done through these organizations. Helpful laws by states have had some stimulus on the organization of these societies and the removal of restrictions by the Federal Government through the Clayton amendment of the Anti-Trust Laws, has laid the way open for cooperative organizations doing an interstate business. While the work of these few within the cooperative movement has had some beneficial effect upon the farmers of the country as a whole, and has done much to give the farmer the best possible local prices, it is doubtful whether as a whole prices have changed much because of it.

Among the governmental agencies to promote rural cooperation probably the most effective is the rural credit act.

The average value per farm in the United States in 1920 was $10,287. This was an increase of almost 100 per cent over the values of the previous census report. The values of some of the farms of the northwestern states, today the greatest productive area in the world, would more than double the figures for the average of the United States. Illinois has an average farm property value of

$31,270, Iowa of $35,616, North Dakota of $19,160, South Dakota of $33,122, Nebraska $29,927 and Kansas $17,122. From these figures it becomes apparent that farming demands a heavy investment of capital. When to these figures of investment are added the needs of operating expenses, in itself a formidable item, reaching $4,000 to $5,000 a year, the significance of the need of financing new farmers and even old ones becomes apparent. When farming demands so large an investment and returns are relatively small, there being only one turnover a year, the process of interesting new groups in farming becomes exceedingly difficult. Renters who would ordinarily enter the farm owner class can only be persuaded to buy land if adequate credit is allowed them. The selection on the basis of capital becomes rigorous and may be regarded as a most important factor in the retardation of the development of a greater land owning class.

In the past, credit in the United States could be secured along two lines: first, a regular mortgage could be secured on the land and fixed real estate amounting to about fifty per cent of the value of the property. This mortgage usually was renewable in from four to six years. It ordinarily could be secured at the rate of six per cent interest plus what charges the lawyer and banker would make for drawing up the necessary papers. Second, a second mortgage could often be secured with comparative ease; the rate of interest in most western lands being about 8 per cent. This mortgage usually ran for a shorter period and had to be renewed every two or three years. The fact that the mortgage had to be renewed and there being a limited market where the farmer could secure his money, it very often placed him in the hands of unscrupulous local bankers and financiers, many of whom played the game solely for the purpose of foreclosing on farmers. The fact is, that a thriving industry developed through the entire west that depended upon its prosperity on the misfortunes of the farmers. A crop failure, a hail storm, hog cholera, a slump in the market at a crucial moment or an early frost on the corn crop, paved the way for many a fortune for those that prey on the farmer through his credit. The chattle mortgage was also used and was for three or six months. It had for its security the cattle and movable property of the farmer. It was usually heavily paid for in the form of concealed interest. This mortgage to a very large extent, affected renters as well as farm owners. In fact it was often the only credit renters were able to secure.

Students of rural economy have for a long time recognized that the credit situation was a most serious one and that among the many factors essential to keep the farmers wedded to their land, not the least important one was that of securing credit for farmers. Not only was it essential that this credit be secured at a reasonably low rate of interest but also that the mortgages should run for longer periods of time, and that the market for its disposal should not be restricted to the local communities.

In studying credits for industrial corporations we find that they are low because of two factors: first, the large amount of security behind them and second, the fact that the bonds are easily negotiable. To secure similar credit accomodation for the farmers, it was necessary that both of these features, that of unlimited guarantee for the security of the credit and the ready negotiability be secured. This was done first in Germany by a merchant, Frederick William Henry Reiffeisen, who conceived the idea of capitalizing the thirft and honesty of the farmers. He realized that farmers, through organizations, could save, could build their own independent supply of credit, could borrow money and could repay it. The basic idea of the Reiffeisen system consisted in pooling the credit of the community, making each farmer responsible for the debts of his neighbor. A farmers' credit union so organized not only enabled each farmer to save his own money but gave him an opportunity to borrow money. To the credit union he was obliged to give a mortgage on his land while the union issued a bond that mortgaged the area of all the farmers in the union. It became imperative that the members of the union be circumspect in their loans and maintain a watchful eye on their neighbor to see that he made a success of his farm operations, and that the money borrowed was spent for the purpose for which it was loaned. The most important committee in the credit union was the credit committee whose function it was to watch the loan and to prevent the possible loss of the mortgage.

About seventeen thousand credit unions of this type were organized all throughout Germany and they have spread from there to Italy, Belgium, France, Scotland and Ireland. They exist today in Massachusetts, New York, Oregon, Texas, Utah, Wisconsin, North and South Carolina. Those existing in the United States are purely local and make loans for short terms only. The Federal Farm Loan Act in the United States has made possible the creation of farm loans for long time periods. According to the report of the

United States commissioner, the average number of members in a credit union is one hundred. The size of share is usually from $1.00 to $2.50 but in exceptional cases may be $100 or more. The average share capital is less than $500. The average working capital which includes share capital, deposits, and borrowed funds is about $40,000.00.

By studying a credit union of one of the states, a better idea of what they are can be secured. The North Carolina Credit Union regards itself as a savings bank and a society of borrowers all in one. It may be also a society for buying supplies cheaply for cash in large quantities. The credit union lends money to members with which they may buy supplies. It is organized by a group of farmers usually belonging to the same school district, having a common interest in a church or in some other way able to do good team work. These credit unions receive savings deposits for which they pay four per cent interest and which also make the depositor a share holder. Thus a man investing five dollars in the savings bank account is at the same time a shareholder for that amount. The secretary of the credit union does not give all of his time to this work and therefore is meagerly paid, thus reducing the cost of running expense to the union.

The credit unions in North Carolina were organized in 1915. The monthly financial statement of February 28th, 1919, shows that there are 755 members, 323 depositors having paid for $9,358.00 worth of shares, with deposits of $26,000.00, loans $250,000.00, number of borrowers 122 and having total resources of $41,000.00.

In 1915 the 64th Congress passed an act entitled "The Federal Farm Loan Act" for the purpose of providing agricultural development, to create standard forms of investment based upon farm mortgage, to equalize rates of interest on farm loans, to furnish a market for the United States bonds, and to create government depositories and financial agents for the United States. It establishes in the Department of the Treasury the Federal Farm Loan Bureau under the supervision of the Farm Loan Board of five members which shall have general supervision of the entire rural credits.

In a general way it established a credit system based on the Raifrisen banks whereby the bonds of the Federal bank replace the mortgage in seeking funds on the open market.

On May 31, 1920, the Federal Farm Loan Bureau reported a total of 200,579 loans granted aggregating $517,951,953 or a half a billion

dollars. The total indebtedness of the farmers in the country as far as enumerators of the census ascertained it, is $1,726,172,851. In other words the Federal Farm Loan Bureau is now carrying one-third of the indebtedness of the farmer. On November 30, 1919, the Federal Farm Loan Bureau reported 3,893 National Farm Loan Associations with an average membership of 27.5 with a total loan of these associations of $282,000,000. In addition there were thirty joint Stock Land Banks with an aggregate capital of $8,636,650.00 and a volume of loans exceeding $54,000,000. The fact that these banks by law were able to sell bonds on their joint mortgage security and that these bonds were tax exempt, gave them a particular advantage. These banks have made loans averaging $9,308.00, thus making them more attractive to those who wish to borrow money. There is no restrictions on the amount that the bank may loan as there is to the Farm Loan Association, except that it shall not make a loan to any one borrower in excess of five per cent of its capital stock.

This to some extent gives an idea of the popularity of this credit, especially in view of the fact that the system is only four years in operation. There can be no doubt but what the system has done a vast deal of credable work in stabilizing the credit of the farmer. The orgy of land speculation that swept through the west in the spring of 1919 in no wise inflated the credit of the farmer through the region because of the ruling that the earning power be the criterion on high priced land and no loans in excess of $100.00 an acre be made for agricultural land.

The Joint Stock Banks because of their special charters have been a real help in securing a cheaper credit for farmers that could not get all the credit they wished through the Farm Loan Associations. Nevertheless it must be remembered that in both these operations it is the land owner or the man with considerable capital who can avail himself of the long term mortgages, the low rate of interest and the amortization plan offered by the Federal Farm Loan Bureau. The renter who cultivates his land on a precarious margin is unable in most localities to get credit for stock, seed or labor in any other way than through the regular local banks on chattle mortgages. Similarly the man who buys a farm may get a considerable portion of his purchase price through one of the land banks on mortgage, but for the marginal capital that he needs for operation, tools, stock and improvements he still must apply to the old sources. Modification of the Farm Loan Bureau in the direction of still greater credit without

endangering the soundness of the structure is difficult. The solution would lie in a development of the Credit Union or the Joint Farm Loan Banks. Neither one of these, however, have proven sufficiently porfitable to investors, since in the nature of the banks they are intended to benefit the borrower. The experience necessary for their organization and operation is often lacking in the locality, especially when the local banks are antagonistic to the progress.

In August 1921, the act re-establishing the War Finance Corporation was approved. By this act a governmental body is authorized to extend loans to banks, corporations or cooperative companies on goods in transit or about to be shipped out of the country and even on goods not yet sold but ultimately intended for export trade. The war time operation showed that for the fiscal year up to November 30, 1920, the corporation advanced a total of $353,000,000 of which $7,800,000 were on cattle loans and $46,000,000 on export loans, most of which included non-agricultural products. At the most, less than 10 per cent of the loans went for agricultural products. No report is available to show to what extent agricultural interests can avail themselves of the act. Nothing in its 1920 report would indicate that it is likely to be an appreciable factor.

The first Farm Bureau was organized in March 1911 in Broome County, N. Y. In 1921 there are estimated 2,300 Farm Bureaus in forty-eight states, receiving annual funds from Federal State and County sources totalling $5,581,666. The movement is in part educational and in part the nucleus of cooperative organizations that have sprung from it. In large measures it received artificial stimulus during the war. However, it is looked upon by many as the force that is ultimately to unite the farmers. At this time no definite assertions can be made as to the effect of the county agent and the farm bureau on cooperative enterprises. The tendency is for the county agent to confine his attention to production, education, organization and propaganda rather than taking an active or leading part in organizing cooperative buying or selling organizations.

Nevertheless, through a national organization of the Farm Bureau, the United States Grain Exchange was organized in 1921 to market and export grain. Various other national cooperative enterprises are being discussed and the movement has made itself felt in an effective lobby in Washington.

In reviewing the subject of rural cooperation as an aid to production one must be impressed with its negligible aspect. No well defined lines, worthy of the magnitude of the industry have appeared.

Cooperation in agriculture is still in the formative period. While there is a long and interesting history of cooperation of farmers in the United States, nothing very tangible has been accomplished or has been even outlined. The Rural Credit act is the most successful form of governmental cooperation that has been undertaken but even here it must be remembered that credit was not increased, it was made cheaper. It has resulted in a savings to many farmers but it has not made credit easier to obtain for the man hard pressed for a large mortgage. It can not be called a stimulus to go into farming. It may be to some extent a stimulus to remain in farming for those already there. The War Finance Corporation does not give promise of much development along this line. The work of the Farm Bureau along cooperative lines remains to be done.

It is fair to conclude from the discussion that there is much in the present situation that tends toward a static agricultural production. While crop yields are increasing, there cannot be expected a further rapid development of unimproved land, nor is the status of cooperation among the farmer such as to justify hopes of its rapid development as a stimuli for production. The reflection of these conditions became more clearly outlined during the war when production failed to make the advances that was expected when the most direct pressure was brought to bear upon the former.

CHAPTER IV

SOCIAL ASPECTS OF PRODUCTION

A. Farm Ownership

There were in the United States in 1920, 6,448,343 farms representing an increase of 1.4 per cent over the census report of 1910, against an increase of 104.9 per cent in 1910 over 1900. Actual losses in numbers of farms had occurred in the New England States, the Middle Atlantic States and the East North Central States. In 1920 such states as New York, New Jersey and Pennsylvania lost from 8 to 12 per cent of their 1910 farms. Even such an agricultural state as Iowa lost in 1910, 5.1 per cent of its farms and a further loss 1.7 per cent in 1920. Minnesota gained one per cent in 1910 and 14 per cent in 1920. The heaviest gains were made in such states as Montana, 119 per cent, Idaho 36.7 per cent, Wyoming 42.1 per cent and Colorado 29.9 per cent, New Mexico gained 189.8 per cent in 1810 and lost 16.4 per cent in 1920.

New England abandoned over 30,000 farms, New York lost 20,000 farms New Jersey 4,000, Pennsylvania 20,000, Ohio 15,000, Indiana 10,000, Illinois 14,000, Michigan 10,000. On the other hand Montana gained 31,000 farms, Idaho 12,000, California 29,000.

It will be seen that the greatest addition in farms occurred in the West notably in some of the newer states. It is also fair to conclude that no development of moment occurred in the older states, especially in the east. Some of the eastern states had difficulty in holding their own. Looked at from another standpoint we find that in 1910 the country increased 21 per cent in population, while the number of farms increased only 10 per cent and in 1920, the country increased 14.9 while the number of farms only increased 1.4 per cent, then only with the aid of newly developed western lands. A more general picture of the relative growth of number of farms and population can be secured from the following table:

Table 35

Per cent Increase in	*1880–1910*	*1910–1920*
Population	83.4%	14.9
Number of farms	53.7%	1.4
Land in farms	63.9%	8.7
Improved land in farms	68.0%	6.

Neither the increase in farms nor the land improved kept pace with the growth of the population during the thirty years preceding the 1910 census and indications are for still greater desparity in 1920. Thus the preliminary report in acreage for New Hampshire gives a loss of 24 per cent in 1920.

The value of all farm property increased over 100 per cent during the ten years from 1900 to 1910 at which time it was given at $78,000,000,000. Land increased 90.1 per cent which is less than the increase made in 1910 when it had increased 100.5 per cent. Implements increased 184.1 per cent; live stock 62.7 per cent and building 92.5 per cent.

A further analysis of these figures may give some interesting clues as to how much of the wealth produced by the farmer has actually been retained by him. Table 36 gives a general view of the average farm in the United States.

TABLE 36

	1920	*1910*	*1900*
Number of acres per farm	148.2	138.1	146.2
Improved acres " "	78.0	75.2	72.2
Value of all property per farm	$12,048.00	$6,444.00	$3,563.00
Value of land per farm	8,503.00	4,476.00	2,276.00
Value of buildings per farm	1,781.00	994.00	994.00
Value of implements per farm	557.00	199.00	131.00
Value of livestock per farm	1,243.00	774.00	536.00
Mortgage per farm	3,356.00	1,715.00	1,224.00

Thus farmer Uncle Sam starts in 1910 with a 138.1 acre farm which fully equipped with buildings, live stock and implements costs him $6444.00. His mortgage is $1715.00, giving him an equity of $4574.00. In this equity land is valued at $4476.00. In 1920 he has increased his acreage by four acres most of it improved land. His farm is now valued $12,048 or an increase of $5,604.00 but his land is now valued at $8503 or an increase of $4027 which to a large extent is only book value as the increase of four acres can in no wise account for more than a very small portion, say 2 per cent of this amount. His mortgage however, has increased from $1715 to $3356 or an addition $1644. In other words, assuming the increases in values of buildings, live stock and machinery to represent real addition and not merely increases in values, of the $5604 increased inventory shown by Uncle Sam $4027 is increased value of land or book value. The actual net

increase is $1577 but as the mortgage increased $1641 he is left with a loss of $64.00 for the ten year period. Similar figures for the ten year period from 1900 to 1910 give the average farmer a gain of $90.00.

In 1920 the increase in acreage per farm took place in the northern and eastern regions of the United States. In the New England states the acreage was increased from 104 to 108 acres, showing the reduction in number of farms is due in part at least, to consolidation of farms. The same is true of the middle Atlantic States as a whole. In New York, the farm acreage increased from 102.6 to 106.8 acres. The improved land per farm, however, remained stationary at 68.1 acres. The same process of consolidation may be noticed in the north central states whose tendecy is towards larger farms.

The increases or decreases in acres of farm land are largely due to local conditions. In the mountain states the average of 480.7 acres is due to stock grazing farms. In 1910 the average acreage per farm was 324 acres. This reduction from the 1900 size of 457 acres probably was due to the introduction of some grain growing on the most desirable land, which was abandoned during the peculiar condition when the 1919 census was taken. The South is reducing its area largely because of the constant breaking up of the plantation system. In such states as South Dakota, Iowa, Missouri, North Dakota, Nebraska, and Kansas, the increase is due to the increased use of machinery, making larger farms for grain and hay growing, desirable. In general it may be said that the size of farms is varying according to the type of farming done and the most economical unit tends to be a larger farm for crops that can be grown with a maximum of labor saving machinery. There seems to be, however, a maximum point beyond which it is not profitable for the farmer to own land.

An excessively large acreage per farm would result in the establishment of a farm laboring class and a land lord class. It would result in plantation or estate farming. On the other hand the continued reduction of acreage per farm would reduce American farming to peasant farming. It is worthy of note that the average size farm for the past thirty years has been fluctuating around 143 acres. In 1900 it was 146 acres, in 1910 it was 138 acres and in 1920 it was 148 acres. Sociologically, this one item would appear to present a sound tendency. Yet a refinement of the data leaves some doubt as to unalloyed optimism. A study of Table 37 may prove informative.

Two-fifths of the farms in the United States were between 100 and 500 acres. The number of such farms, however, were decreasing.

TABLE 37. PER CENT OF NUMBER OF FARMS

	1900	*1910*	*1920*
All Farms	100	100	100
Under 100 acres	57.4	58	58.6
100–499 "	39.9	39.2	38.1
500-acres and over	2.6	2.8	3.4

Farms of less than a hundred acres are farmed by more than half, almost two-thirds of the farmers in the United States. These farms are increasing relatively. On the other hand very large farms of 500 acres or over while constituting a small percentage of the whole, also show a tendency to increase.

In spite of the percentage statistics, it must be remembered that this division of size of farms radically differs from area cultivated and relative importance. Thus farms from 175 to 499 acres, which only form 15 per cent of the whole number of farms, contained almost a third of the total farm acreage of the country. Farms from 100 to 175 acres ranked next. The two groups together contained over one half, 53.6 per cent of the farm area of the country. In the southern states farms of less than twenty acres were more numerous in 1920 than in 1910. In virtually all states except the West North Central, all farms of 1000 acres or more were relatively less numerous in 1910.

The value of all property per farm is given as $12,048.00. In the South, the value is only $5,292.00; while the West has a value of $25,517.00 per farm. In general, the Western farms have a greater value for farm property than the farms in the Eastern States. These varying values per farm, however, are largely due to differences in value of land and buildings. The South is credited with a value averaging $40.00 per acre, while the west with a value of $95.00 per acre. Allowing the value per acre to remain stationary it is doubtful whether the farmers in the United States have made money. The figures given before for the United States as a whole, holds true for virtually all sections. Some of the results might be changed, as figures from a specially enumerated group of farms only are used in table 38.

While it would be unwise to make any generalization from these figures since much of the new value of the land was paid for by the newer farmers, it nevertheless, can be safely said that the profits and financial progress of agriculture in the United States have not been sufficiently large in themselves to attract much new blood. The profits to the farmers have apparently come from a speculative in-

TABLE 38

	1890–1910 increase in equity	*1900–1910 increase in land value*	*Actual 20 year equity*
United States	$2354.00	$2200.00	$ 154.00
New England	925.00	547.00	378.00
Middle Atlantic	503.00	610.00	107.00
East North Central	2103.00	2939.00	836.00
West North Central	5357.00	5387.00	30.00
South Atlantic	568.00	759.00	101.00
East South Central	680.00	489.00	191.00
West South Central	2417.00	1616.00	801.00
Mountain	3947.00	3599.00	348.00
Pacific	2073.00	5876.00	3803.00

crease in the value of the land, an observation that agrees with the concensus of opinion of men who have visited the great agricultural regions in the west.

One-third of the farms (33.6 per cent) of the United States were mortgaged in 1910 and 41 per cent in 1920. This was an increase of 17.7 per cent over 1900 and 21 per cent increase over 1910. The ratio of debt to value was 27 per cent in 1910 and 29 per cent in 1920. It is significant that in the country as a whole not only the amounts of indebtedness increased but also the number of mortgages. Fully appreciating the fact that increased mortgage does not necessarily mean increased poverty, it probably bears some relation to the wealth of an industry. As a whole it must be admitted that more of the agricultural population is getting into debt and that the debt of all of them is increasing. With the further knowledge that the vast proportion of the increased debt is covered by a rise in value of land rather by a development of more land, more machinery or new buildings, the subject of the wealth of the farmers becomes significant indeed.

It should be born in mind that the number of farms operated by owners decreased .6 per cent and that the number of farms free from mortgage decreased 19.6 per cent and that the mortgage increased 131.9 per cent while land and buildings only increased 117.5 per cent.

Increased production may result in part when relatively more farms are being operated, when more land is being brought under cultivation, when tendencies point to a sound social organization on the land as indicated by size of farm, when a surplus is being accumu-

lated which shows itself in investments of better buildings, stock and implements. None of these factors are operative in such a way as to justify expectation of increased production. Farms and land in cultivation are out-distanced in their growth by the general population, the size of farms tend to the extremes of less than 100 acres and more than 500 acres, the surplus in value while impressive is not represented by livestock tools and buildings but by increased value of land. The examination of farm owners in the United States would justify the assertion that they at least present a static aspect of production.

B. Farm Tenancy

Tenant farmers in the United States rent land equal to the combined area of Texas, Illinois, Iowa, Arkansas, Michigan, Wisconsin and Florida. They operated in 1920 almost two-fifths of farms of the country representing 66.8 per cent of the improved acreage and 35.9 per cent of the total valuation of improved and unimproved farm land. Improved land under lease along equals six times the area of Illinois and the unimproved land rented is equivalent to more than the entire area of France. Of the six and a half million farmers in the United States 2,454,746 are tenants, covering 177,059,673 acres and being valued at twenty four billion dollars.

These figures do not give a complete picture of the extent of tenancy in the United States since they do not include land rented by farm owners. Almost a half million farmers in addition to those enumerated above rent land in addition to that which they own. This land covers an additional eighty million acres and is valued at nine billion dollars. These figures give considerable significance to the question "Is the United States becoming a tenant farming nation?"

Viewing tenant farming from the standpoint of tendency table 38 becomes helpful.

Table 39

	1920	*1910*	*1900*	*1890*	*1880*
United States	38.1	37.0	35.2	28.4	25.5
North Atlantic Division	17.2	18.2	20.8	18.4	16.0
South Atlantic Division	46.8	45.9	44.2	38.5	36.1
North Central Division	31.1	28.9	27.9	33.4	20.5
South Central Division	51.2	51.7	48.6	38.5	36.2
Western Division	17.6	14.1	16.6	12.1	14.0

It will be noticed that the tenancy in the United States has increased from 25 per cent in 1880 to 38 per cent in 1920. This increase was not steady. It was greatest from 1880 to 1900 and seems to have abated after 1900. The increase after 1900 was only 1.7 per cent in 1910 and 1.1 per cent in 1920. If the average rate of increase in tenancy in the next thirty years keeps pace with that of the last thirty years, we should then look forward to a tenancy of 50 per cent in 1950. This outlook would seem dubitable in view of the check given the tenancy movement during the period indicated. There have been actual decreases in tenancy in the last ten years in the North Atlantic and Western Divisions. The south only has a percentage of tenancy greater than that for the United States as a whole.

Taken the southern group of states as a whole, the increasing tenancy here may be attributed to the breaking up of plantation farming, the land being taken up by white and colored farmers as tenants. In these two divisions, the South Atlantic and the South Central, the average number of acres per farm operated by managers declined from 2962 acres in 1900 to 1612 acres in 1910, clearly showing the rapid division of plantation farming. Moreover, the total number of such farms declined from 18765 to 16284 in the same period. The tendency here, therefore, is decidedly healthy in spite of the increase of tenancy, as the South is substituting tenancy for plantation farming. Not only do these states have a greater percentage of tenancy than the United States as a whole, but the rate of increase in tenancy is more rapid.

In the main in the United States, tenancy follows the value of land per acre. In the North Atlantic States, the value of land is low

TABLE 40

States	*Value of Land & Buildings per acre*	*Per cent of tenancy*
Illinois	$231.93	42.7
Iowa	227.09	41.7
Indiana	125.98	32
Ohio	113.18	29.5
Minnesota	109.23	24.7
Wisconsin	98.78	14.4
Missouri	88.08	28.8
Nebraska	87.95	42.9
Michigan	75.54	17.7
South Dakota	71.62	34.9
Kansas	62.32	40.4
North Dakota	41.10	25.6

and the percentage of tenancy is correspondingly low. This is particularly true in the New England States. Maine, New Hampshire, and Vermont have an average value of $35.00 per acre and an average tenancy of 5 per cent in Maine to 11 per cent in New Hampshire. The highest value per acre on the Eastern coast is in New Jersy with $109.67 per acre and a tenancy of only 23 per cent. This exception may be due to the high value of much of the suburban property that makes the farm value appear high for the state as a whole. In the North Central Division the states having the highest value per acre and the highest tenancy are given in their order in table 40.

It will be noted that with the exception of Nebraska, South Dakota, Kansas, Wisconsin and North Dakota tenancy follows the value of land with reasonable fidelity. Some of the departures made by the states can be accounted for by the high value of farm property. A Nebraska farm averages $29,927 bringing it close to the Illinois farm which has a value of $31,270. A South Dakota farm is valued at $33,122. The large amount of pasture in Wisconsin with the attending dairy industry may account for its low tenancy. Minnesota's land values have increased from $45.62 to $109.23 in the past ten years; its tenancy has not had a chance fully to adjust itself since the rise in value to a very large extent took place during the latter half of the census period. Since it is attempted to show that tenancy follows high land values it would be expected that the phenomenon of tenancy would show itself best a few years after the rise in land values. The greatest increase in values took place during the years 1917–1919 inclusive. The next census is expected to more clearly show a reflection of these values in tenancy.

An intensive study of any one of the states would probably show still more clearly how tenancy follows the value of land. Thus in Pennsylvania, if the counties containing the large cities are excluded, and the remaining counties be divided into those whose land is valued from $25 to $50 per acre, it will be found that twenty-six counties will average a tenancy of 27.7 per cent while nineteen counties having a valuation of $10 to $25 per acre have a tenancy of 18 per cent. In New Jersey, New York and other eastern states these figures are complicated by the presence of a large number of estates making it appear that tenancy is on the medium priced land.

Tenants have been accused of grain farming. This is borne out by the figures in table 41 (1910 census):

TABLE 41

	Per cent of Tenants	*Per cent of Improved Land in*			
		Corn	*Wheat*	*Oats*	*Cotton*
United States	37.0	20.6	9.3	7.3	6.7
New England	28.0	2.5	0.1	3.1	
Middle Atlantic	22.3	7.4	5.5	8.6	
East North Atlantic	27.0	24.6	7.9	12.6	
West North Central	30.9	21.9	15.7	9.6	0.1
South Atlantic	45.9	23.5	4.6	2.8	18.6
East South Central	50.7	25.8	3.0	2.0	18.0
West South Central	52.8	25.6	2.7	2.2	25.0
Mountain	10.7	2.9	8.1	7.3	
Pacific	17.2	0.4	15.2	3.6	

It will be seen that the section having the greatest tenancy devotes the larger part of their land to grain. This is to be expected. A tenant wishes to grow something on which he can make immediate returns commensurate with the largest profits. He is interested in those crops only that will give him returns within a year or the shortest time after planting. He does not wish to invest in a great deal of capital and hence readily takes to grain farming. New England with only 8 per cent of tenancy devoted 6 per cent of its improved land to grain and 52.3 per cent to hay and forage, against an average for the United States of 15.1 per cent. The North Central Division with 28 per cent tenancy grows 16 per cent hay and 45 per cent grain. The relatively low percentage of tenancy in the Pacific states is explained by the fact that it is a fruit growing country. California in 1910 received 33.1 per cent of its crop returns in the form of fruit. The production of fruit is a long distance business. It requires waiting many years for returns, hence is not suited for tenant farming. Similar conditions exist in the small fruit regions of New Jersey and the fruit sections of New York.

The tenant manages larger farms than the owner. The average farm in the United States contains 148.2 acres. The tenant farm contains 107.9 acres and the owner's farm 162.2 acres. While this would seem to indicate a larger acreage for the owner, a closer study of the table reveals that in the United States the area for tenants is brought down in the southern states only. In the West North Central states the owner's farm has 18 acres more than the tenant. The South Atlantic favors the owner by 55 acres. The East South Central by 68 acres and the West South Central by 146 acres. On the other

hand, tenants exceed owners in acreage per farm in all the eastern, western and Pacific sections of the country. If the south were excluded, it would be safe to say that the tenants as a rule manage larger farms than the owner. This would be still further brought out if this portion of the census gave statistics of owners who rent additional land. Many farm owners renting adjacent areas of land are classed as farm owners, and the average number of acres per farm owner is given an unjustifiably higher figure.

Moreover, the proportion of land improved is high for the renter. The owners in the United States have 80 per cent of their farms improved, while the tenants have 71.6 per cent of their farms improved. The figures favor the tenants in many sections of the country.

The value of land is higher for the tenant in all regions of the United States except the South and the New England states. Investment in buildings uniformly favors the owner, as does also the investment in implements, though in the latter the tenant competes with the owner on almost equal terms and surpasses him in the Middle Atlantic and East North Central States.

Though the South shows the expected decrease of livestock per tenant, the tenants as a whole over the United States have as much and in some cases more invested in livestock than the owners. Thus the eastern coast states and the northwestern states have tenants who have as much invested in livestock as the owners. These figures are contrary to all expectations but should not be taken to sanguinely. The tenants in these sections have larger farms and the investment therefore is more likely to be in horses than in cattle. At any rate it seems very unlikely that a renter would keep stock for the express purpose of maintaining the fertility of the land as is true of many owners.

The accompanying table is often cited as proof of the fact that tenancy is a stepping stone to farm ownership. The increase in tenancy does not necessarily mean that the farmers are selling their farms and becoming tenants or that they are relinquishing their hold on the land. The increasing tenancy is relative. There is nothing to show that owners are receding into the tenancy class. The contrary view that tenancy is a stepping stone to ownership would seem to be justified by table 42.

The decrease of renters in the upper ages and the increase of farm owners would indicate that many of the tenants become farm owners,

TABLE 42. PERCENTAGE OF TENANTS OWNING AND RENTING FARMS

	1890		1900		1910	
	Owners	*Renters*	*Owners*	*Renters*	*Owners*	*Renters*
Under 24 years	32.6	67.4	27.7	72.2	23.3	75.5
25 to 34 "	49.8	50.7	45.3	54.7	43.9	54.9
35 to 44 "	64.0	36.0	64.4	35.6	61.7	37.2
45 to 54 "	72.3	27.7	70.7	29.3	71.3	26.8
55 years—over	82.2	17.8	81.4	18.6	81.4	18.2

yet it would be altogether groundless to place so optimistic a view on the matter as the table indicates. The increased percentage in owners may be due to the fact that they are most likely to stay on the farm, whereas the renters as they become older abandon farming and move to the towns.

The increased value of land and buildings and the exhaustion of the new fertile land makes it harder for imigrants and farmers to start as farm owners. More men are renters under thirty-five years than over and less than 25 per cent of the farmers over 55 years are renters. The tendency therefore clearly is for young men to start as renters, remain as renters until 40 years old and then buy farms or abandon farming. With the increase in value of land, the age period at which farms are acquired by renters has naturally increased. Thus a little more than half remained renters in 1900 at the age of 34 years, and there were slight increases in the percentage of renters of the same age period in 1910. A similar increase may be expected in the census of 1920.

Nevertheless, the increasing rate of tenancy indicates that such changes from tenant to owner is becoming less and less frequent. While a tenant is not necessarily a poor man he is a transient, leaving gaps in the fertility of the soil when he changes his farm. The recent increase of land value must have produced a proportional increase in renters throughout the northwest, with the concomittant conditions of rent farming. At this writing no statistics are available to show to what extent the renter is transient. Table 43 shows the percentage of farmers by number of years on the farms for 1910 and 1920.

It will be observed that in 1920, 65 per cent of the farmers had been less than 10 years on one farm and over one-tenth had been less than a year and that one-fourth had been less than two years on the farms they were operating. From general observation it is fair to assume that the largest proportion of these transient farmers are tenants. The social implications of such a large transient farm population must be apparent. Community development, such as roads, schools,

TABLE 43

Number of years on Farm	*Per cent Distribution* 1920	1910
Reporting years on farm	100	100
Less than one year	10.6	17.3
One year	14.4	10.8
Two to four years	22.4	23.7
Five to Nine years	17.4	17.1
10 years and over	35.1	31.1

churches, clubs, credit, and cooperative life depends on a stable population. This migration of farmers must necessarily form disruptive factors in rural life of far reaching significance. The economic losses to the migrating farmers and to the nation can scarcely be over estimated. Losses in soil fertility and lack of soil and farm development are not the only debit account accruing from this condition. The fact that each community shows advertised scores of sales of all farm property of the retiring farmers which again is purchased by the incoming farmers piece-meal with an attendant loss on all sides, gives but an inkling of the losses involved. And who can make up to the renter the loss in value of social prestige, the losses due to lack of participation in the community, the losses suffered by family because of constant moving, changes of schools and neighborhoods and the loss of the chief value of farm life that of home and independence?

Looked at from another angle, it might be well to inquire who are the new group that are taking the place of the farm owners. While as yet there is no class in the United States, except possibly the Negro of the Southern farms who look upon themselves as tenants, still with two-fifths of the country as tenants and the tenancy on the increase, it becomes clear that a land owning aristocracy is developing. If so, we must not close our eyes to the fact that with it must develop a tenant class. Moreover, it is on the most fertile soil in the country, the great northwest, a region regarded as the bread basket of the world where tenancy is rapidly increasing. It is here then that a land owning aristocracy is developing. It is the highest priced land in the United States that is being farmed by a transient non-owner. What the effect of this development will be on the land, rural institutions like schools and church, on the standard of living and on rural progress is not pleasant contemplation for those interested in rural welfare. Certainly it is beginning to have its effect on production and will find its reaction in prices for food and on urban social problems.

C. Farm Labor

The census of 1920 estimates the number of farm laborers in the United States as over six million. This includes all persons ten years of age or over, other than farm owners and tenants, gainfully employed as farm laborers. The census further reports that approximately 3,310,534 farm laborers are employed on the home farm; that is, children working for their parents, and 2,636,966 working out. This latter class of almost 2,700,000 then represents approximately the number of farm laborers in the United States in 1910.

In view of a new method of classification of laborers, it is difficult to compare this number with the previous census report. However, there seems to be nothing to indicate that this number has relatively increased.

Continuing to examine the figures for farm laborers, we find over one-half million of them to be Negro and living in the south, another 200,000 are children below the age of fifteen and hence probably most seasonal and temporary labor. This reduces the number of white farm laborers to approximately 2,000,000. It is by no means certain that even this number represents the number of farm laborers constantly employed on farms as even these are to a very large extent migratory and seasonal. To what extent seasonal labor must be employed is shown in table 44 where the percentage of work done on each month of the year is shown for various sections.

Table 44

	United States	*New Jersey*	*Iowa*	*Louisiana*	*Oregon*
January	2.8	2.7	2.4	3.6	2.3
February	3.7	2.9	2.5	7.0	4.1
March	6.8	5.	5.0	11.0	7.5
April	10.4	10.	10.7	13.1	9.8
May	12.6	12.	12.1	11.7	9.
June	13.1	12.9	11.4	10.6	10.5
July	11.3	13.5	12.8	5.8	13.4
August	8.9	12.5	11.8	5.3	13.7
September	9.8	10.8	9.6	8.0	12.9
October	9.9	8.0	8.9	11.4	8.7
November	7.1	6.8	9.1	8.5	5.5
December	3.6	3.5	3.7	4.	2.6

It is worthy of notice that the average farmer in the United States has almost five times as much work to do in June than in January. The New Jersey farmer can use four additional men in July but none in January; the same conditions prevail in Iowa, Louisiana and Ore-

gon; in fact all over the United States. This very condition demands a migratory farm labor population. Nothing short of a change in methods can remedy this condition as it is folly to expect farm profits to be able to maintain those dependent on it in comparative idleness the greater portion of the year. Hence the demand for seasonal labor has increased both in the fruit and truck farms situated adjacent to large centers of population and drawing on the city for its seasonal supply, and also on the specialized larged scale agricultural production demanding large gangs of comparatively cheap labor with a few to supervise the machinery. Over a quarter of a million of this labor is foreign born.

At best on the 6,000,000 farms in the United States, not more than 2,000,000 hired men are employed, making one out of every three farmers employing a man. This in itself may give some clue to the fact that yields per acre are not increasing rapidly and that improvements are not being made. The average wage on the farm for labor has risen in recent years. Table 45 gives the wages paid in various sections of the United States in 1910 and 1920.

TABLE 45

	Per Month				*Per day at Harvest*			
	With Board		*Without Board*		*With Board*		*Without Board*	
	1920	*1910*	*1920*	*1910*	*1920*	*1910*	*1920*	*1910*
United States.....	46.89	19.21	64.95	27.50	3.60	1.45	4.36	1.82
North Atlantic.....	51.92	21.65	75.54	33.19	3.78	1.63	4.68	2.08
South Atlantic.....	35.75	13.77	50.56	19.75	2.69	1.07	3.30	1.33
N. C. East Miss. R....	51.49	22.94	70.09	31.81	4.17	1.75	5.00	2.16
N. C. West " " ...	59.63	25.10	78.79	35.45	5.03	2.01	9.54	2.43
South Central.....	36.53	15.28	51.94	21.90	2.80	1.14	3.41	1.47
Farm Western.....	73.21	32.69	99.43	46.48	4.48	2.02	5.39	2.52

The figures for 1920 are probably abnormal since the country was still enjoying a high degree of prosperity. It is not likely that the wages of 1921 or 1922 will be found within 20 per cent of those given for 1920. Nevertheless certain factors are worthy of notice from the table. Money wages have increased since 1910—239 per cent while wages partly paid by board have also increased 239 per cent. Yet the increased wage still seems lamentably low when compared with wages of skilled laborers customary for that period. The average money wage per month without board is $64.95. It is not probable that even many unskilled men in the United States received so low a wage at

that period. If the hours of labor expected from farm help during seven days of the week were compared with the eight or even ten hour day put in by the urban laborer the wage per hour would be in still more striking comparison. The wonder is not that the farmer's boy goes to the city as a laborer but rather that so many of them become farm laborers in the community. When the seasonal nature of the work is considered, the wage becomes still more strikingly low. Yet in spite of these conditions the supply of farm labor seems to keep up to the demand. Table 46 gives the relation of supply to demand in per cent.

Table 46. Per cent of Supply to Demand

1921	108.8
1920	68.8
1919	82.9

There are no marked gradations whereby a farm laborer can mount the step from a lower to a higher paid position. The average farm employes seasonal labor at the lowest wage. If it employs a man the year round, he is of somewhat higher grade, as the herdsman, teamster or general hand. The farmer is the superintendent. His own returns frequently are less than what he pays his permanent hired man.

Hours on the farm are necessarily long in conformity with the needs of the work that must be done.

Wages are relatively low and frequently are not paid promptly. The social status of the hired man is unenviable. His isolation gives little opportunity to even meet men of his own class.

Seldom a home, allowing him to keep a family, is provided. Single men are mostly desired as farm help. This latter provision necessarily forces all men ambitious to establish families to abandon work as a farm laborer. The number of persons given as employed as farm laborers between the ages of 21 and 44 years is 1,165,000 but at 45 years or over only 392,000 remain. It may be argued that the older aged group become farmers though the conjecture that they move to town is equally plausible.

D. Profits in Farming

In considering profit in farming it is necessary to note in what ways the farmers figure their profits. Profits of course, are not established by merely adding up the sales at the end of the year, but certain expenses such as seed, fertilizer, labor, interest and depreciation must be deducted. The business man in the city considers his

TABLE 47

Areas	*Year*	*Number of Farms*	*Average labor Income*
Cass and Menard Counties, Ill.	1910	73	$ 622
Guthrie and Green Counties, Iowa	1910	77	291
Chester County, Pa.	1911	378	789
Lenawee County, Mich.	1911	300	481
Muck-land Farms of Northern Indiana and Southern Michigan	1914	100	1,072
Cut-over Lands of Michigan, Wis. & Minn.	1914	801	49
Barry and Lawrence Counties, Mo.	1914	244	370
Anderson County, S. C.	1914	122	110
Brooks County, Ga.	1914	106	502
New England:			
Southern New England	1914	719	392
Northern New England	1914	441	436
Southern Maine	1914	415	202
Frederick County, Md.	1915	150	368
Mercer County, Pa.	1916	349	285
Small Farms around Washington, D. C.	1916	152	408
Irrigated Farms in southern Arizona	1913–1915	446	713
Utah Lake Valley, Utah	1913	69	417
Do.	1914	75	728
Sumter County, Ga.	1913	268	471
Do. 1	1918	280	1,817
Washington County, Ohio, (average of 7 yrs.)	1912–1918	175	272
Clinton County, Ind., (average of 7 yrs.)	1910–1913–1918	700	533
Dane County, Wis., (average of 5 yrs.)	1913–1917	300	408
Gloucester County, N. J., (average of 3 yrs.)	1914–1916	375	1,013
Polk County, Fla. (average of 2 yrs.) 2	1817–1918	105	843
Hillsboro County, Fla., " " " " "	1917–1918	232	562
Frederick County, Va., " " " " "	1916–1917	302	1,478
Salt Lake Valley, Utah	1915	428	162
Total		8,172	

1. Same area repeated after a lapse of 5 yrs.
2. Surveys being continued over a period of years.

own salary as a part of the expense of doing business and his net income is his profit. The business man on the farm does not pay himself a salary, however, and his net income includes his wages and his profits; this income is referred to as "labor income." Since in addition to labor, capital is essential to run a farm the amount of capital available for investment necessarily becomes a factor in profitable farming. Profitable farming cannot be dissociated from the

land the farmer has at his disposal. In other words there is a certain minimum of acres below which the average farmer will find it difficult to make a living. In addition to management several other factors, such as soil, markets, labor and crops have important bearing on the subject of profits on the farm.

Table 47 gives the labor income of 8172 farms in various parts of the United States. In studying the table it is well to emphasize again that the labor income is the amount the farmer has left for his labor and superintendence after all expenses, including five per cent on the investment has been deducted from his gross receipts. It represents what he earned as a result of his year's labor after the earning power of his investment has been deducted. In addition to the labor income the farmer received a house to live in, fuel (when cut from the farm) garden products, milk, butter and eggs.

While a study of the average labor income is made difficult since various years are involved and a price index would be necessary to bring the money income in conformity with real income at least one deduction can be made with reasonable safety. Profits seem small. Location would at first glance seem to be a factor. In 1910, seventy-three farms in Illinois averaged $622 while in the same period seventy-seven farms in Iowa barely made half that amount. When Sumter County, Ga., is studied however, we find that 268 farms in 1913 averaged $471 while 280 farms in the same region in 1918 made $1,817. Unless considerable progress had been made in those five years in the arts of agriculture, this change can only be accounted for

TABLE 48

Year	*Average Reward Per Farmer*	*Index of Prices of Goods Consumed by Farmer*	*Average Reward per Farmer of Goods Consumed at Prices, 1913*
1909	$ 322	.955	$373
1910	459	.978	469
1911	381	.984	387
1912	363	.995	365
1913	369	1.000	369
1914	448	1.011	443
1915	509	1.023	498
1916	596	1.097	543
1917	922	1.280	720
1918	1267	1.547	819
1919	1511	1.747	865
1920	419	2.124	197

in extraordinary prices received that year for crops of the farmers. Seven hundred farms in Clinton County Indiana, averaged $533 in seven years 1910–1918. Giving the farmer due credit for rent and other perquisites received the average labor income seems very small, the lowest being $49 a year, the highest being $1,817 at the boom of the cotton crop in a cotton country. In another southern state the average income for the same year was $562. A greater refinement of the figures given would be necessary to establish any relation between factors making for profits.

The average income of farmers in the United States is estimated by Willford I. King in his treatise "Income in the United States" from which table 48 is taken.

In commenting on this table Mr. King says, "The indications from the table are then that farmers, even though they are extrapreneurs, and belong to the class usually considered to consist of men of higher talents than mere employees, nevertheless obtain on the average less in return for their efforts than do the average employees in most lines of industry. Only in the years 1918 and 1919 did they receive more than the average earnings for all employees in the United States, while in 1920 their rewards fell to a mere fraction of the average wage in other lines. Evidently the farmer can scarcely with justice be considered the pampered child of fortune."

The relation of capital to labor income is given in Table 49 of the New Jersey Experiment Station of 1914:

TABLE 49. RELATION OF CAPITAL TO PROFITS

Relation of Capital to a Given Labor Income on 192 General Farms Operated by Owners in Monmouth County, N. J. Number of Owner Farms producing a Given Labor Income with a Specified Capital.

Total Capital	*No. of Farms*	*Labor Income*			*Over $2000*
		Less than $400	*$401 to $1000*	*$1001 to $2000*	
$5000 & less	15	14	1	0	0
5001 to 7000	30	21	6	3	1
7001 to 10,000	38	26	6	5	1
10,001 to 15,000	42	30	10	10	3
15,001 to 20,000	36	12	9	11	4
20,001 to 30,000	22	10	2	6	4
30,001 and over	9	4	0	3	2
Total	192	107	34	38	13

Per cent of Owner Farms Producing a Given Labor Income With a Specified Capital.

Total Capital	*No. of Farms*	*Labor Income*			*Over $2000*
		Less than $400	*$401 to $1000*	*$1001 to $2000*	
$5000 and less	15	99	7	0	0
5001 to 7000	30	70	20	10	0
7001 to 10,000	38	67	15	18	0
10,001 to 15,000	42	47	24	24	5
15,001 to 20,000	36	42	25	31	12
20,001 to 30,000	22	34	9	28	19
30,001 and over	9	44	0	33	34
Total	192	56	18	20	6

Thirty-four per cent of approximately one-third of all these farm owners had a minus labor income. Those with a small capital investment had three men out of five with a minus labor income, while those with large capital had but one out of four with a minus labor income. The men with small capital have apparently small opportunity of making a large labor income. Evidently capital limits profits on these farms. As capital increases the number of successful farms increase. The groups with the largest number of successful farms have invested over $20,000 Capital. This is a large amount to invest in a farm business, but the greater opportunity warrants this investment. Should it be possible to combine some of the smaller farms into farms equal to those capitalized at $20,000 to $30,000, this area would be far more efficient and better developed.

Table 50. Relation Between Capital per Farm and Other Financial Factors

Capital per Farm	*Receipts per Farm*	*Expenses per Farm*	*Farm Income*	*Int. on Capital at 5%*	*Labor Income*
Under $10,000	$ 830	$ 234	$ 596	$ 382	$214
$10,000 to 18,000	1455	443	1012	740	272
18,000 to 25,000	1980	582	1398	1046	352
25,000 to 35,000	3023	1036	1987	1480	507
over $35,000	4420	1630	2790	2391	399
Averaged	$2583	$ 866	$1717	$1332	$385

This general conclusion reached that the larger amount of investment leaves a larger labor income is corroborated by a study of the Nebraska Experiment Station.

The men whose capital was less than $10,000 had average receipts of only $830. After paying expenses and allowing 5 per cent upon the investment these men had a labor income of but $214. In order to make a good labor income on a farm of this size the receipts must be increased. As the capitalization increased the gross receipts increased faster than the expenses. This was true, the farms having an investment up to $35,000 after which labor income declined.

In northern Livingston County, New York, G. F. Warren found in 1914 the following relation between capital invested and labor income.

TABLE 51

Capital of Operator	*Number of Farms*	*Average Labor Income*
$ 1,000 to $ 2,000	3	$ 38
2,001 to 3,00	10	81
3,001 to 4,000	16	195
4,001 to 5,000	23	347
5,001 to 7,500	46	355
7,501 to 10,000	62	460
10,001 to 15,000	75	694
15,000 to 20,000	28	935
Over $20,000	29	1412

It will be noted that here, as in other sections of the country, the fact is confirmed that labor income has a direct relation to the amount of capital invested. Moreover, it must become apparent that no labor income here given is sufficiently large to attract ambitious men until the investment of capital in every case reaches $20,000. Four hundred farms studied in Minnesota showed a similar tendency. The labor income with a capital of $5000 or less was $165, and with $25,000 or over was $635. Profitable farming then is dependent on the amount of capital one is able to invest. The labor income becomes sufficiently large for a reasonably comfortable living when the investment has reached well over the $20,000 mark.

Hand in hand with the investment goes the need of sufficient land for profitable farming. In Monmouth County, New Jersey, the

following relation was found to exist between size of farm and labor income:

TABLE 52

No. of Crop Acres	*Average No. Crop Acres*	*Labor Income*
30 or less	21.0	$ 115
31 to 50	40.4	186
51 to 75	61.7	333
76 to 100	87.6	721
101 to 150	117.8	794
151 and over	171.8	2145
Average	68.8	$ 491

It is only after the size of the farm reaches 75 acres that the labor income becomes at all equivalent to what the farmer could probably get as a hired man. With an acreage less than that he would be better off if he worked for wages for someone else. While the number of farms studies is small, it is nevertheless significant in view of the verification the study has received in other areas where similar surveys were conducted. The Nebraska Experiment station reports the following table:

TABLE 53

Area of Farms (in acres)	*Average Area per Farm*	*No. of Farms Averaged*	*Average Labor Income*
40–100	80	20	$122.00
101–150	124	27	355.
151–200	157	68	323.
201–250	237	33	684.
251–320	292	27	444.
Over 320	423	20	324.
All Farms	207.5	195	385.

The labor income received on farms from 40 to 100 acres was a third of the wages paid the average hired man. The 200 and 250 acre farms were the most profitable after which the profits recede again. A confirmatory study made at the Minnesota Agricultural Experiment Station shows tendencies.

TABLE 54

Crop Acres	*No. of Farms*	*Average Crop Acres*	*Average Labor Income*
Under 30	36	20	$181
31– 50	59	42	260
51– 70	82	60	329
71– 90	47	82	369
91–110	55	99	210
111–130	51	121	353
131–150	30	143	543
151–170	14	158	473
171–190	13	180	412
191 & over	13	224	242
Average or Total	400	89	$319

The best of terms were secured on farms with a 143 crop acreage. In New York State, F. G. Warren reports the study of 586 farms in Tompkins County and 578 farms in Livingston County, as follows:

TABLE 55

Acres	*Livingston County Average Labor Income*	*Tompkins County Average Labor Income*
30 or less	$ 54	$168
31– 50	295	254
51–100	437	373
101–150	593	436
151–200	934	635
Over 200	1082	946

Farmers with less than 100 acres did not make as much as hired men. It is only when we come to farms of over 200 acres that a somewhat satisfactory income is made. It is apparent that a minimum amount of capital and land is needed in order to maintain a profitable farm under ordinary conditions in the United States. The best labor incomes are secured where a minimum of 150 acres are farmed with an investment of $20,000 of capital.

That there are definite social factors tied up with profits on farms no one can doubt. A direct study on 674 farms made by Prof. G. F. Warren of the relation of size of farm and boys staying at home is shown in table 56.

TABLE 56

Acres Farmed	*Number of Families*	*Per cent of Sons*		
		at Home	*on Other Farms*	*Not Farmer*
30 or less	25	21%	33%	46%
31– 50	29	52	22	26
51–100	171	75	8	17
101–150	187	78	10	12
151–200	136	72	10	18
Over 200	126	84	8	8

The smaller farms do not have the employment or the incentive to keep the sons on the farm and it is from the smaller farms the heaviest migration takes place. Almost half of the boys from the 30 acre farms went to the cities and only one-fifth stayed home. Three-fourths of the boys on the 150 acre farms stayed at home. Table 57 shows the division of farms in the United States by size.

TABLE 57

	Per cent of Total Farms			*Per cent Increase*
	1900	*1910*	*1920*	*1910–1920*
All farms	100	100	100	1.4
Under 20 acres	11.7	13.2	12.4	—5.1
20– 49 "	21.9	22.2	23.3	6.3
50– 99 "	23.8	22.6	22.9	2.6
100–174 "	24.8	23.8	22.5	—4.4
175–499 "	15.1	15.4	15.6	2.9
500–999 "	1.8	2.0	2.3	19.6
1,000 & over acres	0.8	0.8	1.0	34.4

The most numerous of farms are those comprising an acreage of 20 to 50. The next groups are those from 50 to 99 and then those from 100 to 174. These latter farms comprise one-third of the farms for the West North Central group of states and the Mountain group of states and are most numerous in the Pacific Division. This is in accordance with what we have found the soundest farm practice. Nevertheless it must be pointed out that the smaller farms were increasing much more rapidly than the larger farm. The South which consists largely of these smaller farms has increased as high as 50 per cent on farms of less than 50 acres. The New England states also have had their most rapid increase, 20 per cent, on farms of less than 20 acres. However, the vast agricultural states in the middle west find the 150 acre unit as the most profitable farm, and are

attempting to adhere to it. Relatively these farms are losing out. The gain has only been 6 per cent against an increase of all farms of 10.9 in 1910 while in 1920 they had actually lost 4.4 per cent against a gain for all farms in 1.4 per cent.

If it be assumed that the surveys on the relation of size of farms to profits are correct and hold with a fair degree of accuracy all over the United States, it must become apparent that less than two-fifths of the farms in the United States give an adequate labor income to those that work them. From other data discussed under ownership, mortgagors and renters, all of them pointing towards a similar conclusion, we would be led to believe that this is nor far from the truth. Farming has not given an adequate return except to the exceptional man, and then only when all other conditions, particularly those of capital and size of farm, have caused a favorable condition to exist. Whether the lack of profit in farming is caused by incompetent farming, or incompetent farming is due to lack of profits may be an open question.

Education and training no doubt are an important factor in profits. Table 58 gives a study of 573 farmers in one county showing the relation of education to labor income.

TABLE 58

Education	*Number of Farmers*	*Labor Income*
Attended District School	398	$318
Attended High School	165	622
More than " "	10	847

The table would present striking proof of the need of education as a factor in profits since a High School training seemed to give an average increased income of $529.

However, there can be no doubt that the small farms have their quota of good farmers, but the factors indicated prevent adequate return. If conditions in the country are such as to cause the division of farms organized on a profitable basis, it cannot help react adversely in the long run as men will abandon farms on which they cannot make a living. The New York state commission believes one of the factors for resettling its abandoned farms to be a uniting of the smaller farms into larger more profitable units. The high prices asked for land, the lack of farm help, the need of credit and the inadequate facilities for getting them all help to combine in causing ventures on a smaller scale, ventures that in the long run have to be abandoned if the owner

is dependent for his living on the farm exclusively. It must be remembered that a large part of the milk, beef and crops produced on the small farm are produced with the cheapest of farm help, the wife and the children of the farmer. To compete with them the man who intends to go into farming as a business and pay for his help, he must have units of the greatest efficiency. The small farmer begins to lose when his unpaid help ceases to function. The condition of the country from the standpoint of making farming profitable seems anything but encouraging and the tendency does not point to a readjusted agriculture placed on a paying basis. This is even true of the South. The small 20 acre cotton farm may be a more desirable condition than the plantation system of farming, it does not represent the ideal system of agriculture desired for a country to attract and retain ambitious men in it. At best the farmer on a twenty acre cotton farm is bound to feel that he is not economically in so good a position as the averaged laborer in the city with no investment and no risks.

E. Conclusions

A review of the aspects of production presented in this chapter can not help but make a pessimistic picture of the subject. It would seem that farmers are not in a favored class from the standpoint of wage workers or profits. This is reflected from any angle from which the situation is viewed. Owners are increasing their mortgages without corresponding increases in tools, land or buildings. Relative to population, farm ownership is on the decline. On the other hand tenancy is increasing. No amount of reasoning can reassure the country that tenancy presents as stable, healthy and productive a phase of agriculture as ownership. Besides the loss of production, the development of the landlord class, in the middle west called the retired farmer, cannot in any way be made advantageous to production or to the social life of the country. The farm that formerly supported the owner and those holding his mortgages now must support the renter as well. The renter's side of the social life is presented in the realistic story of E. E. Miller part of which reads:

> But harder still is this:
> To think of what your children miss
> And what your women-folks must bear
> As you go drifting here and there.
> What neighborhood has in its life
> Place for a cropper's busy wife?

Who cares to have his kids about?
At school they're likely in and out;
They leave their friends when they must go;
They lose ambition as they grow.
They never set an orchard tree,
Or fix the yard up so 'twill be
A nicer place another year.
Next year they'll likely not be here.
So year by year they drift away
From folks with better show than they;
And year by year the wife grows old,
And less and less life comes to hold
For her of things that women crave.
She, too, is nothing but a slave—
A slave to crops and a busy man
Who must keep going when he can;
A slave to toil that has no end
And does not help her lot to mend.

The shift from tenancy to ownership is not frequent and in fact shifts are going on the other way.

Owners are now lapsing back into tenancy. The American notion that the farm laborer, farm tenant and farm owner are different successive steps towards the ownership of an American farm does not seem to be borne out by the facts. The wages and conditions of farm labor are such as to preclude probabilities of getting towards farm ownership via the route of hired man. The fact that farms are being divided, when smaller acreages mean greater probabilities of losses and farm abandonment, that the capital necessary for profitable farming is increasing and that a minimum of training and education is necessary to farm with reasonable profit would all argue that there are forces gaining momentum that are likely to retard production. The tendencies of ownership, tenancy, labor and profits would seem to be disruptive.

CHAPTER V

SOCIAL ASPECTS OF RURAL LIFE SHOW LARGE GROUPS UNAFFECTED BY IMPROVEMENT

A. Rural Schools

The Commissioner of Education estimates that there are 195,400 rural Schools in the United States. No complete survey of the condition of these schools is available, hence partial territorial surveys will have to be relied upon to get a composite picture. The rural schools may be roughly divided into those that are one room or one teacher schools and those that have joined with neighboring districts to build a more commodious school building, grade the pupils, have more supervision of teacher and teach an enriched curriculum. These consolidated schools usually provide transportation for their pupils to and from the school. The Commissioner of Education estimates that there are 10,000 such schools in the United States today. This is five per cent of the total number of schools. It is of interest then to survey the kind of schools in which 80-90 per cent of the rural children get their education.

In a rural survey of South eastern Ohio out of 548 school buildings investigated, 475 were one roomed and 45 were two roomed. All of the one roomed schools had windows on both sides giving the cross lights so injurious to sight and were heated by a single unjacketed heating apparatus. Seventy-eight per cent had the old fashioned double seat, only 38 per cent had wall lamps or charts, with a third of them having positively unsanitary toilets.

In another survey of South western Ohio Voght reports 74 of the 88 buildings as one roomed and 8 with two rooms, 57 had pictures of some kind, 11 had an organ or piano, 76 had one acre of ground or less. In three counties in Missouri of the 232 rural schools all were one roomed, six being fairly modern. Some of the schools had home-made furniture, very few had blackboards, and 75 per cent had their only water supply from unfiltered cisterns. In a survey of Montgomery county, Md., the further fact was added that the average rural school teacher had 30 or more pupils teaching them eight different grades or approximately 30 classes per day. The average class was 4 pupils, the average length per period is given as 15 minutes.

Seventy-five per cent of the Schools in Marin and Sonoma Counties, Cal., are one teacher schools, receiving an average of three visits per year from the county superintendent in the way of supervision.

In Iowa 11,000 one teacher schools are reported, in Illinois 10,105 and in Pennsylvania 10,038.

A study of the preparation of the teachers of the one roomed schools of Pennsylvania by Leroy King in certain typical counties shows that 39 per cent had no secondary training whatever, 7 per cent had less than one year, 4 per cent had one year, 11 per cent had two years, 17 per cent had three years and only 22 per cent had a four year secondary training. Seventy-six per cent had no Normal training whatever. Prof. Voght reports 93.1 per cent of the teachers of Butler Co. Ohio with two-year certificates which are issued to teachers inadequately prepared. The migratory character of the teacher is here indicated in table 59.

TABLE 59. CHANGES IN TEACHING FORCE

Schools having in five years	*Number*	*Per cent*
1 teacher	2	5.7
2 "	11	31.4
3 "	10	28.6
4 "	9	25.5
5 "	2	5.7
6 "	1	2.9

One-third had four or more teachers in five years, and sixty per cent had three or more teachers. Ninety per cent of the rural school teachers in Nebraska are women, fifty per cent are below twenty years of age and eighty-eight per cent below twenty-five years and forty-eight per cent had not completed a secondary training. Seventy-nine per cent reported no experience in agriculture, seventy-two per cent had no experience in domestic science, ninety per cent had no experience in manual training and ninety-two had no experience in social settlement work. Fifty eight per cent of the teachers had been teaching less than two full terms. These figures are indicative as to what extent the rural school teacher is competent to be a leader of rural life as is heard so often from illadvised platform orators. Neither the training, nor continuity of service justifies any expectation that she can assume such leadership.

The fact that the yearly income of 86 per cent of the Nebraska rural school teachers is less than $500 out of which a median board of $114 for eight months was paid throws some light on the condition of the rural school. In the state of Maryland 30 per cent of the white rural school had less than 15 pupils each and 10 per cent had more than 30 pupils in Montgomery county, Maryland 52.8 per cent of the School population attended school against 62.8 per cent for the United States as a whole. Out of 10,800 children 3,726 were in regular attendance. Sixty-five per cent of the children of public school age did not attend regularly. The highest total enrollment of the white school for the year was 50.9 per cent of the white school population, for the colored schools it was 57.6 per cent of the colored school population. This is a significant fact when the further fact is considered that the average cost of maintaining a white school is $1407.16 and the average cost of maintaining a colored school is $379.92. The average cost of educating each white pupil in regular attendance is $40.55 per year that of a colored pupil if $10.49.

The proportion of pupils enrolled in each grade begins to decline rapidly after the fourth grade as can be seen from table 60.

TABLE 60. ENROLLMENT OF SCHOOLS BY GRADES IN MONTGOMERY COUNTY

	White Schools	*Colored Schools*
Grade 1	829	804
" 2	429	254
" 3	514	303
" 4	541	223
" 5	461	112
" 6	403	39
" 7	296	9
" 8	40	0

Summarizing this cursory survey of the one teacher rural school of various parts in the United States, it is fair to draw the following conclusions. 1. There is lack of equipment, 2. there is lack of supervision, 3. there are too many subjects taught, the school being too large for one teacher and the classes too small for stimulation and competition, 4. teachers are not adequately prepared, 5. attendance is irregular and small, 6. too many pupils drop out in the earlier grades, 7. in the south the colored schools are probably even worse than the white rural schools.

It is interesting to now turn to the consolidated schools. While they number only around ten thousand they really form a greater

percentage of the educational rural census than this figure indicates as a consolidated school represents four or more one roomed country schools. Hence it would be fair to say that the ten thousand consolidated schools represent more than forty thousand former one roomed schools. According to this method of estimating the type of rural school the country children enjoy, it would be fair to say, that a fifth of them have the advantages of a consolidated school.

In ten years the number of pupils entering High School from the eighth grade of the rural schools in Randolph County, Ind., varied from 21-50 per cent, those entering from the consolidated schools during the same period varied from 94-100 per cent. This in a sense gives a composite picture of the consolidated school. In Preble County, Ohio, the attendance increased from 81 per cent before consolidation to 92 per cent after consolidation. The consolidated districts in Iowa averaged thirty square miles. In Jackson Township the average distance of the routes carrying children to school is 9.4 miles. Out of the 34 consolidated schools 28 had both motor truck and horse conveyances. Forty-four states have given authority to school officers to expend money for the transportation of pupils. All of the consolidated schools in Minnesota teach agriculture, domestic science, manual training, music and foster neighborhood and literary clubs among the community and pupils.

Comparing the rural schools good and bad with the city schools the following table will prove illuminating.

TABLE 61

	Rural Schools	*City Schools*
School term	144 days	182 days
Per cent of school term lost and missed	28.4%	21.4
Teachers' salary	499.	854.
Per capita of property	59.07	146.52
Per capital cost of education	24.13	40.60
Average Permanent Improvement	4.82	7.16

From the table it becomes apparent that the country does not provide equal educational opportunities to the city and country child. It discriminates in favor of the city boy. The table does not tell the whole story. The difference in per capita cost for instance of $16, while in itself significant does not tell how much more expensive it is for the general overhead in the country when pupils can not easily be brought together as is the case in the city. In order to give

the rural boy and girl an equal education with the city boy the expenditures per pupil must be heavier in the country in every instance. It is well in conclusion to remember that at least eighty per cent of the children in the country have not even the advantages of the consolidated school. Just how much the country school is responsible for the drift to the city it is difficult to tell. No doubt many a prosperous farmer desiring to give his children the advantages of a real education is persuaded to move to town for that reason. The filling up of the towns in the middle west with so-called retired farmers, farmers in the early thirties, can in a large measure be explained by the desire of farmers to give their children the advantages of a good education. On the other hand the paradoxical fact remains that the matter of the consolidated schools are largely in the hands of the farmer. The obstacle is largely one of increased taxation, state aid in many states providing for help for a portion for the increased expense. The refusal of the community to assume this additional burden can in part, at least, again be explained by the general poverty of the farming committees.

The poor school, the poor attendance, the poor teacher, the poor equipment all combine to depress the general level in the country. The average farm boy starts his schooling after corn husking in the November and stops when plowing starts in April. At the age of sixteen when he has outgrown the country school he emerges with a fourth or fifth grade training, an education frequently poorer than his parents received in the splendid schools of Norway, Sweden, Germany and Denmark.

B. The Rural Church

The author did not have access to any complete survey of the rural church in the United States if such a survey exists. It is therefore again necessary to resort to local surveys in various parts of the United States to get an idea of the efficacy of the rural church as a social institution, whether it is growing and how far it forms a social center in the same sense that many institutional churches are in the city.

A survey of the rural church in Butler and Darke County, Iowa, revealed the fact that out of 48 churches in Butler County, 37 were in villages but serving mostly the farmers, and eleven were in the open country. Not a single one of the eleven had a resident minister. Fourteen of the ministers holding services in the county came from

outside of the county some of them having their residence in Cincinnati or Dayton. In Montgomery County, Md., out of 86 churches in the county 34 had pastors living within a reasonable distance from their parish and a total of forty-four ministers attended to the eighty-six churches. In six counties of south-eastern Ohio, out of three hundred seventy-seven rural churches only 18 per cent had resident pastors. In 18 counties of south eastern Ohio only one-third had resident pastors. Out of 105 rural churches in Lane Co., Ore., 25 ministers gave their full time to churches and live within a reasonable distance of their parish. In Greene County, Ohio, out of 66 churches ministered to by 38 ministers, thirty lived within a reasonable distance of the church. In Gibson County, Tenn., out of 72 rural churches two had resident ministers; 66 per cent of the rural churches in north western Ohio had non resident ministers.

While it is not quite safe to generalize from these isolated facts, it is nevertheless fair to say that over half of the rural churches in the United States do not have resident ministers. Many of the rural ministers have other occupation than that of ministry, some being farmers. It is safe to say moreover that results similar to those obtained in the town church where a minister gives his full time to the development of his parish can not be expected in the country. Such long distant ministry could not be expected to lead to strong internal organizations. Comparative data of the rural churches having resident ministers and those having ministers come from without is not available at this time but the following table showing somewhat the growth of the rural church is significant.

TABLE 62. GROWTH OF RURAL CHURCHES

	Lane County	*Butler County*	*Darke County*
Churches showing net loss for year	24%	72%	20%
" breaking even	29%	9%	40%
" showing net gain for year	47%	19%	40%

It would seem that more than half of the country churches represented above were losing members or were at a standstill. Corroborative testimony of similar conditions as compared to town churches in the same county is shown in the following table.

TABLE 63. GROWTH OF RURAL AND TOWN CHURCHES

	Gibson County		*Six Counties N. W. Ohio*	
	Country	*Town*	*Country*	*Town*
Churches losing	36%	25%	36%	30%
Churches at standstill	16%	9%	35%	17%
Churches growing	32%	49%	30%	53%

The table would indicate that the churches in the country were losing out much more rapidly than those in town. Again a more detailed knowledge of the communities would be necessary before generalizing. It could be assumed with safety that the country churches would be expected to lose because of the general loss of rural population and for the same reason the town churches would be expected to gain. Moreover the growth of the number of automobiles in the country would cause many farmers to bring their families to the better equipped and organized town church. If the latter is the case, however, the town churches do not show the growth that would be expected from them under the circumstances. Low membership would seem to be a cause of decline. Sixty per cent of the churches in Ohio have a membership of less than 100 and 55 per cent have less than 75. Another factor making for weak churches would be short ministry applied by such pastors as do come. In the largest and most efficient denomination 48 per cent of its rural ministers were about to begin their first year and 74 per cent their first and second year.

Fifty-eight per cent of the rural ministers of one of the denominations in Ohio averaged less than $1100 in salary in 1917. Four Counties in Ohio having 65 per cent farm owners have 86 per cent of them church members, against the 33 per cent tenants the church membership only shows 13 per cent membership of tenants. It would be a fair assumption to make that the migratory character of the American tenant would not make him a supporter of rural institutions, a statement well borne out by the figures in these counties. Just how far the tenant problem also contributes to backwardness of the rural church and rural school as a whole is not difficult to imagine from the facts of our increasing tenancy.

The decreasing attendance at some of the churches may also be accounted for by the overcrowding or overlapping of churches in the districts. To what extent that is true in the United States as a whole is difficult to say. In the townships of six Ohio states having from one to four churches 27.8 per cent of the churches are decreasing, while

those having more than five churches 36.2 per cent of the churches are decreasing.

The Sunday School is the most common adjunct of the rural church, 90 per cent of the churches in 18 counties in Ohio studied having Sunday Schools. Sunday Schools are also frequently the forerunner of church organization and may be temporarily housed in the country school. About forty per cent of the rural churches report other church organizations such as Ladies' Aid and Young People's societies. The amount of social activity of the church in the way of outings, Christmas service and other social events varies considerably; the strength of the church, the leader and the social background often being the factors that determine this activity. In four counties of Northwestern Ohio 60.5 per cent of the rural church events were money-making events. In these same counties are listed 12 Men's organizations connected with the church against 205 Women's organizations.

The picture of the rural church presented here is by no means complete even in the limited areas studied. The general disruptive factors already noted in rural life seem to be operative with great force on the rural church. The rural school has many hopeful features which do not present themselves in the rural church. The number of churches in the open country would indicate that the country is religious. Eighteen counties in Iowa have a church to each 280 persons of its population, yet illegitimacy in these same counties is higher by 68 per cent than that of the state, as a whole one of these counties has almost 98 per cent of its population American born. In these 18 counties illiteracy is in every instant higher than that of the state. The illiteracy for the state is 4.2 per cent the lowest of these 18 counties shows an illiteracy of 4.3 per cent, the highest 11.6 per cent. A virile rural church should affect morality and education favorably.

The relation of education to production has already been pointed out. It would be difficult to establish a direct relation between the vigour of the rural church and production. The assumption can fairly be made that a sound church life would tend to greater community life with its attendant features for production. It has been claimed that if rural America is to be religious, the religious farmer must be the better farmer and supersede the irreligious farmer. This notion

of survival thru production, thru good farming as a factor in maintaining the religious atmosphere of rural America should be of significance to religious leaders in their program for rural churches.

C. Rural Transportation

A fraction less than one third of farms in the United States have automobiles. Three out of every four farms in Nebraska and more than half the farmers of Nebraska, Iowa, South Dakota, Kansas, Minnesota, North Dakota, California and Illinois own motor vehicles. In thirty-three states, more than twenty-five per cent of the farmers are automobile owners. Excluding the south no state has less than one automobile to every five farms.

The thirteen million people living on the farms comprising about one-eighth of the population own a little less than one fourth of the automobiles of the country. Roughly speaking, the chances for a person owning an automobile are twice as good in the country as in the city.

It is difficult to establish a relation between farm owned automobiles and roads. The most road miles per square mile are found in Connecticut 2.9 miles in which 30 per cent of the farmers have automobiles, while Nebraska with 75.6 per cent of its farmers owning automobiles only has one mile road per square mile. General density of population is apparently a more important factor in road building.

That there should be fifteen times as many automobiles as trucks is significant as indicating the value the farmer places on his social contact with his town and neighbors above the commercial contact. The difference between the use of the truck and the automobile becomes still more significant when the distribution of the truck is studied more minutely. Thus in the eastern states where farmers do considerable trucking for large cities, trucks have the densest distribution. One-tenth of the farmers of Rhode Island, New Jersey, District of Columbia and Massachusetts own trucks, while less than 3 per cent of the farmers in the North West own trucks. It is fair to assume moreover that many of the trucks serve social purposes just as no doubt, a due proportion of the automobiles serve exclusively for commercial purposes. Mississippi, having 60 per cent colored farmers with an average acreage of 60 acres against 362 acres for Nebraska, 66 per cent being tenant, has one automobile for every

twenty farms. Evidently the desire for the automobile is present to the same degree in Mississippi as in Nebraska.

The same desire for social life is emphasized when the figures for tractors are studied. There are nine times as many automobiles as tractors. The tractor is found on the more level farming tract in the country. One-sixth of the farmers of South Dakota have tractors, 15.2 per cent of North Dakota, 12 per cent of Montana, 10 per cent of California and only 1.4 per cent of the New England Farmers. If it could be argued that the automobile has an economic value to the farmer hence its popularity the same argument, with much greater emphasis can be made of the tractor for supplying stationery and motor power. The tractor industry may still look for great expansion yet the present figures give emphasis to the point that the farmer is more eager to spend his money on good living than making more money.

The same desire for social contact and good social life is emphasized when statistics for telephones are scrutinized. Nearly two-fifths of all the farms in the United States are equipped with telephones. Iowa has telephones on 86 per cent of its farms, Kansas 77.9 per cent, Nebraska 76 per cent, Indiana 66 per cent, Missouri 62 per cent, Ohio 62 per cent. The southern states, with a most backward type of farming has over one-half million telephones in the farm homes. The north west boasts of almost one and a half million. Only those familiar with distances and costs of installation in such states as Montana, Idaho, Colorado, and Nevada can appreciate the significance of the fact that 26.3 per cent of the farms of these states are provided with telephones. Table 64 recapitulates some of the items discussed.

TABLE 64

Farms in United States Having	*Per cent*
Automobiles	30.7%
Trucks	2.0
Tractors	3.6
Telephones	38.9
Water piped into house	10.0
Gas or Electric Light	7.0

That improvements follow wealth, that is, social advantages are installed when the farmer can afford it, is indicated by table 65 in which the highest five states are arranged according to rank in farm value, automobiles and telephones.

TABLE 65

Highest Farm Value	*Largest Per cent Having Telephones*	*Largest Per cent Owning Automobiles*
Iowa	Iowa	Nebraska
South Dakota	Kansas	Iowa
Illinois	Illinois	South Dakota
Nebraska	Nebraska	Kansas
California	Indiana	Minnesota

With the exception of California each one of the other states reappear in the columns of telephone and automobile ownership.

The significance of these innovations can not be over-estimated. The building of roads and further development along these lines with such additional probable innovations in the near future as a "wireless" presages a new era in the social aspects of rural development. Rural mail delivery and parcel post are so common and of such wide development as to make any discussion of them here hackneyed. The utmost restraint is necessary not to over emphasize what these means of communication in their totality may mean to the future American Farmer. That these factors may make for a new rural mind, sweeping before it the obstacles hitherto in the way of cooperation, increased production and decreased overhead may be one of its outcomes. Totally different results are also probable. Nothing at the present time clearly indicates the drift. In a complex social process one hesitates to predict the social results when a country with fifty million people living as individuals, on farms miles away from town and miles from each other, with some decaying social institutions about them, unable to keep pace in organization and economic development with the remainder of the country is about to annihilate space and overnight discover their fellow workers and take inventory for change.

D. RURAL HOMES

Piping water into the house on the average farm involves the erection of a tank, installation of pump and engines and the building of a waste well. What comes to the city man as a matter of course involves a first average outlay of about $500 and an upkeep of cost of approximately $100 a year. This would not include the installation of hot water, bathrooms or laundry equipment. Ten per cent of the farms in the United States have water piped into their homes. Almost

half of the farms in New England, one-fifth of those in the Atlantic States and one-eighth of the farms in the Northwest are supplied with water. While ordinarily these social improvements follow the line of wealth of the farmers in this instance it seems to be a westward movement having its greatest adherents in the east.

The Illinois board of health in a survey of 1501 farm houses found that 62.8 per cent had no privy of any kind, 40.2 per cent of these being farm houses with a white population. The United States department of agriculture in a survey of 10,000 farmsteads in 1911 obtained the following data:

TABLE 66

	Without Running Water	*With Outdoor Closets*	*With Bathtub*
Eastern States	54%	87%	21%
Central "	68%	93%	18%
Western "	57%	86%	23%

In 1920, the New York State College of Agriculture obtained the following data of a survey of 3775 farms. Thirty per cent had water piped into the house and 11 per cent had bathtubs. The data would indicate that some progress is being made though it would seem that in 1920, ninety per cent of the people in rural districts lived without water in the homes and eighty per cent were without bathtub. The introduction of running water would be the first and most elementary need of a modern well equipped home and would precede laundry and other kitchen equipment.

The poverty of the American farm home can best be illustrated by the fact that in nine-tenths of them water is carried into the house by the bucket when needed. The northwest has 10 per cent of its farms equipped with gas or electric light against 7 per cent of the farms for the country as a whole. Three reputable concerns quote the price for the installation of a standard gas or electric light plant on the farm from $500 to $2000. Assuming that the cheapest of these installations is made the American farmers have spent over a quarter billion dollars for this farm convenience as may be seen from table 67A.

The American farm home shows as a whole a discouraging picture. It is fair to say however, that the tendency seems to be towards very rapid improvements. If the process of bringing electricity or water to the farm home should come within reach of the income of the average

TABLE 67A

	Cost of Automobiles	*Cost of piping water to house*	*Cost of electricity or gas*	*Total Cost*
Iowa	$ 93,648,600	$ 16,925,500	$ 16,276,000	$ 126,850,100
S. Dakota	33,182,000	4,578,500	3,222,500	38,869,000
Illinois	75,351,600	13,338,000	11,636,500	100,326,100
Nebraska	56,402,400	10,345,500	6,031,000	72,778,900
California	37,471,800	32,964,000	15,259,500	85,695,300
Kansas	61,510,200	7,669,500	7,195,000	76,374,700
Indiana	57,142,800	11,738,000	10,292,000	79,172,800
East S. Central	49,098,000	7,999,500	10,360,000	67,457,500
Mississippi	8,967,600	1,491,500	1,448,000	11,907,100
Alabama	9,543,600	1,493,500	4,172,500	15,209,600
United States	1,187,738,400	322,044,000	226,404,500	1,766,186,900

TABLE 67

	Value per Farm	*Per cent Farms having Telephones*	*Per cent of farms having Autos*	*Per cent of farms having water piped into house*	*Per cent of farms having gas or electricity*
Iowa	$35,616	86.1	73.1	15.9	15.2
S. Dakota	23,122	59.4	69.4	12.2	8.6
Illinois	31,270	73.2	53.0	11.2	9.8
Nebraska	29,927	76.4	75.6	16.6	9.7
California	26,122	31.7	53.1	56.0	25.9
Kansas	17,122	77.9	62.0	9.3	8.7
Indiana	12,937	66.4	46.4	11.3	10.0
East S. Central	3,485	19.3	7.8	1.5	2.1
Mississippi	2,908	10.4	5.5	1.1	1.1
Alabama	2,123	17.4	6.2	1.2	3.3
United States	10,514	38.9	30.7	10.0	7.0

farmer a great step towards a better social and sanitary rural environment will have been taken. There can be no doubt but that such improvements will have most definite reactions to production.

E. Race, Nativity, and Sex

Of the six and one half million farms in the United States, 76.3 per cent are operated by native white farmers, 9 per cent by foreign born white farmers and 14.7 per cent by colored farmers. Of 950,007 colored farmers 97.8 per cent are negroes. Less than four per cent of colored farmers are found in New England, the Middle Atlantic

States,The Northwest and the West. Twenty-three to thirty-three per cent of the southern farms are operated by colored farmers. In fact 98.9 per cent of the negro farmers in the United States are in the 16 southern states as compared with 98.6 per cent in 1910. Whereas the increase of all farmers has been only 1.4 per cent the colored farmers have increased 3.2 per cent. Mississippi shows the largest percentage of colored farmers, 59.2, then North Carolina with 56.6 and Louisiana 45.8 per cent. The fourteen per cent colored farmers operate a total of 4.7 per cent of all lands in farm. The states with the largest percentage of colored farmers also have a larger percentage of tenancy than the United States as a whole, the value per farm is less and the acres per farm are less as may be seen from table 68.

TABLE 68

	Colored Farmers	*Tenancy*	*Value per Farm*	*Acres per Farm*
United States	14.4	38.2	10,514	148.2
Mississippi	59.2	66.1	2,908	67.1
North Carolina	56.8	64.5	3,990	74.2
Louisiana	45.8	57.1	3,499	74.0
Georgia	41.9	66.6	3,669	81.9
South Carolina	25.9	43.5	4,236	64.7
Alabama	37.2	57.9	2,127	76.4

It is reasonable to conclude from the table that a large percentage of the colored farmers are renters operating land of smaller value and less acres than in the United States as a whole and even of smaller value and less acres than is given in the table since these figures include both renters and owners. The tendency of the colored farmers is however, indicated by the fact that the number of colored owners decreased 3.3 per cent whereas the white owners only decreased .4 per cent. The colored renters increased 5.4 per cent while white renters increased 3.8 per cent. It is safe to conclude from the crude data that the colored farmers show even less relative progress than the white farmers. The fact that the total number of colored farmers increased 3.1 per cent while the total number of white farmers increased only 1.1 per cent is indicative at least that the colored man in the south is shifting from a plantation laborer to a tenant, a change of some significance to production.

Table 69 shows the status of the foreign born farmer in the United States.

TABLE 69

	1920	*Per cent*	*Per cent Increase*
Total number of farmers	6,448,366	100	1.4
" " of native white	4,917,305	76.3	3.1
" " foreign born white	581,054	9.	—13.2

Over three-fourths of our farmers are native white, and only 9 per cent are foreign born white. The native farmers have shown an increase of 3.1 per cent while foreign born white farmers have actually decreased 13.2 per cent. The heaviest decrease occurred among the German born farmers, the 1920 census showing 36 per cent less than in 1910. English born farmers decreased 33 per cent, Irish born farmers 50 per cent, Norwegian farmers decreased 13.6 per cent. On the other hand the present immigration from southern and eastern Europe deprecated by so many and alleged to be an immigration to the cities only shows that at least a considerable proportion are going on farms. Thus Polish born farmers increased 140 per cent, Hungarian farmers increased 86.1 per cent, Russian born farmers 25.6 per cent and Italian farmers 72.1 per cent. These figures should be of significance on immigration policy since it is this group that are going counter current, going out on farms when all movement of all other classes of people is city-ward. Recent immigration legislation having for its object the exclusion of these groups will do much to still further deplete the rural population, gaps in which these immigrants in part helped to fill. The South shows the lowest percentage of foreign born white farmers while almost half of the farmers of North Dakota are foreign born. Minnesota has 37.7 per cent foreign born farmers, Wisconsin 28.5 per cent, Michigan 24.6 per cent and New Jersey has 18.6 per cent. Since the foreign born white farmers constitute only 9 per cent of the total number of farmers these figures are suggestive in showing that they are crowding into the prosperous states of the Northwest and the Middle Atlantic Division.

Four per cent of our farms are operated by women. They are distributed thru all the states, Rhode Island has 7.2 per cent woman farmers, Nebraska has 1.9 per cent. The seven States in which women farmers constituted 6 per cent or more of the total farmers are Rhode Island, Mississippi, New Hampshire, Connecticut, Alabama, Massachusetts and South Carolina. It will be noted that it is the south and

the New England states where women are at all prominent as farmers. Seventy-one per cent of the women were farm owners, and 28 per cent were renters. The four per cent women farmers operated less than three per cent of the farm land.

The foregoing discussion on social aspects of rural life tends to give some bright and some discouraging tendencies in rural life. Eighty per cent of the rural children are not given an opportunity for rural education equivalent to that received by the children in town. The churches do not seem to present a growing, aggressive social program nor do they form the rallying point of rural life. On the other hand automobiles and telephones seem to be popular in the country and are rapidly being introduced. While many homes are being equipped with water, light and sewage disposal progress in this line leaves much to be desired. A discouragingly large percentage of farms are still out of the pale of these innovations. The direct relation between these factors of rural life and production is difficult to establish, yet there would seem to be no doubt that they bear a relation to the attraction of rural life and thus indirectly on production.

It, moreover, seems true that the city migration has affected the foreign born white from northern and central Europe to a greater extent than even the American farmer.

The German, English, Irish, Scotch, and Norwegian farmers are decreasing, while farmers born in Poland, Russia, Italy and Hungary are increasing. The immigration law expressly designed to exclude these groups would tend to eliminate the only white group today going to the farms in large numbers. The colored farmers in common with the foregoing group are not only holding their own but are increasing relatively. Women farmers do not seem to play as yet an important part in the agriculture of the nation.

CHAPTER VI

GENERAL SOCIAL ASPECTS

From the foregoing discussion it is fair to conclude that the food surplus is decreasing. This decrease is evidenced by the decreasing percentage of wheat exported, a decreasing actual number of bushels exported and a decreased area, relative to population, is sown to wheat. Similar observations hold true of other grains tho their importance is minor. These decreases in surplus were only partially checked in their downward trend during the war.

Moreover, the exports of beef cattle and beef products continued to fall even during the war while imports of beef cattle, coffee, sugar, cereals continued to rise. The United States today consumes 95 to 99 per cent of all it produces except wheat and here it consumes 85 per cent of all it produces. It is importing 15 per cent of its primary and an increasing volume of its secondary food.

The author does not conclude that an increased volume of food cannot be grown, nor that the shift from agricultural independence to dependence on imported food stuffs is a calamity, nor that a shortage of food is threatening the country. All of these things may or may not be true. Certain of the implications will be discussed later. The author does, however, wish to point out a tendency of which social students should take cognizance. It may be possible promptly to develop the potential agricultural possibilities of the country when economic pressure is brought to bear on the farmers in the way of relatively increased prices. This is conjecture. The facts are that no such advance in production took place during the war when every conceivable form of pressure was brought to bear on the farmer for its increase.

It is also fair to conclude that consumption is increasing. Food consumers are increasing, food producers are decreasing. The nation consumes a constant quantity irrespective of price or production. During the war the increase of consumption continued at prewar velocity in spite of food conservation propoganda of the most intense type. Only a few primary and secondary foods comprise the nation's diet. Food from live stock or secondary foods play a very important part in the nation's food. These secondary foods demand increased

skill, capital and labor for their production and may be regarded as long distance industries. They are not industries in which farmers, shifting about are likely to engage. This fact it is well to remember when the problem of renters and rural migration is being discussed.

Moreover, production has several aspects of being static, e.g., it is relatively fixed. The assumption that production can rapidly be increased when the price is sufficiently high is not borne out by the history of prices and production for the last fifty years. Crop yields while on the increase bear no relation to price. Crop yields at present are low and would indicate great agricultural possibilities. While it may be true that the production per man in the United States is greater than in Europe, the war has demonstrated that no appreciable change could be attained by increased effort to produce more per acre. At any rate, the frontier condition of much of our country is a solace to those who see no great danger in the low yields. That these low yields have been the cause of our decreasing surplus in the midst of a growing urban population cannot be doubted, but it is well to remember that some of the factors such as developing new land have ceased to be operative and that the next few decades will show a shift either to increased yields or to the beginnings of supplementing our food definitely by importation. We may also hope for much in the way of increased production and conservation by rural cooperation though there is nothing in the history of rural cooperation nor in the present outlook to indicate marked development along this line.

In searching for some of the causes of decreased production we find that farm ownership, relative to farms is decreasing and tenancy is increasing? We find mortgages on farms increasing more rapidly than the improvements in buildings, live stock or tools justify and hence are covered merely by increased land values. Frontier conditions are changing and future farm losses will probably not so readily be covered by increased land values. We find equities in farms decreasing, and the tenancy mounting rapidly as land values rise, bringing in their wake a landlord class. We find production of live stock and fruit and other crops demanding time investment, curtailed by an increasing tenancy. We find a lowpaid, seasonal, shifting, disorganized labor group and the boast that laborers graduate into a tenant class, while tenants become farm owners who ultimately wipe out their mortgages, not justified by the figures. We find profits in agriculture by and large very low.

The rural school is poor though a healthy development of a consolidated type of rural school is developing. Eighty per cent of the farm children are today attending a one roomed, one teacher rural school, poorly taught, poorly supervised and poorly equipped. The school year is short and attendance irregular.

The rural church is in a state of decline. No clearly defined transition stage, towards greater adaptation to the new rural life as brought about by the automobile is discernible. Both the poor school and the poor church are no doubt important factors in the retardation of production.

The rural home, by and large, has no running water, no inside toilets or reasonably decent privies, is still lighted by lamps and leaves much to be desired from the standpoint of conveniences for the wife. However, here too a healthy movement for improvement is under way, automobiles are being introduced very rapidly into the farm homes making the outlook for greater contact with neighbors and towns most favorable.

It is difficult to conclude this discussion without giving at least some consideration to the implications to which it gives rise. Assuming the thesis to have faithfully portrayed actual conditions; that the food surplus had been decreasing; that consumption is inelastic and increasing even during a period of war when every effort to conserve food was made; that production has serious aspects of remaining static in the face of this increasing consumption; that this static condition of production is in part due to a decreasing farm ownership group, an increasing tenancy, a migrating farm labor problem, a low profit and a disruptive social life as represented by the rural schools, churches, homes and character of population; assuming all this to be true, what are the consequences likely to be? While it is not the province of this paper to speculate on the desirability of the country to be self-sustaining agriculturally or on the desirability of having a large proportion of the population on farms or having these farmers own their land, be prosperous and contented, a few thoughts along this line may not be out of place.

It may be argued that being agriculturally self-sustaining is not necessarily desirable, that food should be purchased in the cheapest world market, that being nationally self-sustaining is a myth at best that the migration of the American farmer to the city is in line apparently with his own best interests and hence in line with the best, interests of the nation, and that agricultural production will adjust

itself in due time and will receive its share of reward when population begins seriously to press for food, a condition as yet seemingly remote.

On the other hand the probabilities of neglecting the soil, the greatest, natural and indestructible resource that the country has, would seem to be academic. The exodus from the farms does not merely carry with it implications of getting food from abroad, it also means that the largest class of capitalists, the largest group of people having an interest in the maintenance of American institutions of government join a property-less city group. Already a large and growing group of people in the cities, people without property and without interest in American historic institutions are beginning to call democracy into question. This group is not concerning itself with the constitution or the declaration of independence as principles of government. To them liberty and the privilege of the vote are meaningless. Participation in government has no value. New ideas, born of city life, of factory toil, of hand to mouth living, of disinterestedness in property are making for new shibboleths, such as economic democracy, better distribution of wealth, shorter hours, etc. They are seeking a more direct means of gaining or controlling property. The educated group, the farm group, the property group look aghast at the forms of expression these ideas are taking. To them it is imported Bolshevism and I. W. W.ism, to be cured in part by restricting immigration, suppressing the foreign language press and threatening deportation of non-naturalized agitators. But may not these problems be the natural product of the urban environment we are so sedulously erecting and if so will restriction of immigration suppress these problems? Are they the result of an alleged inferiority of incoming stock or are they the inevitable concomitant of urban, factory life? Would not the maintenance of democratic institutions be better served by maintaining a large group of people who have a vital interest in supporting these institutions? It is not meant to imply here that the final form of democratic government has been worked out and that the maintenance of present institutions should be the aim of statesmen but surely it is reasonable to expect that if changes must come they come evolutionary rather than revolutionary. A democracy has a right to protect its institutions in part by the promotion of those environmental conditions most conducive for their development. If such be the case foregoing study should be of interest as presenting a problem of major importance to the democracy of the country.

Moreover serious problems of sociological nature are beginning to burden the cities. The social debtor group in one form or another has grown to serious proportions. In response, great institutions and organizations have arisen and are at work in bringing efficiency into charity and social work. The work done by many communities along this line must commend itself to all thoughtful persons. Yet should not poverty, in all its forms, be looked upon as a disease whose prevention is desirable rather than an inevitable condition whose suffering should merely be alleviated. Under a capitalistic régime prevention of poverty would involve the elimination of unemployment and giving an increased return to the lowest paid group. It would involve making the poorly paid group scarcer relative to land and capital or in other words shift the unskilled labor in such a way that more employers are seeking laborers than laborers are seeking jobs. An increase in the capitalistic employing group and a decrease of unskilled labor would go a long way towards the elimination of poverty. Education would be of prime importance in giving impetus to the change. Yet, how can a large employing group be more easily maintained than a farm ownership group giving employment to themselves and to a large subsidiary group. Thrift and the creation of capital is basic with such a group. What is actually happening, however, is that this group is swelling the unskilled labor group in the cities and is diminishing the employing group in the country. The tendency is counter current to the best interests of society as a whole.

Many other considerations also may point towards the advisability of conscious direction of the rural trend than permitting a "natural order" to create a balance or adjustment. Moreover, as has been pointed out in a previous chapter it is not at all certain that agriculture will reassert itself when the price of farm commodities becomes higher. Production as has been shown in agriculture does not show a very close relation to price. Factors beyond the control of the farmer determine production and for relatively long periods this production has no relation whatever to price. On the other hand certain factors are at work for a decreased production, they cannot easily be checked and they are likely to continue out of sheer momentum far beyond the point of equilibration of supply and demand. It is the prevention of any such momentum for decreased production that an enlightened self interest should prevent.

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